

UDK 615.1:615.272

ANALYSIS OF THE FEATURES AND DEVELOPMENT PROSPECTS OF THE GLOBAL MARKET FOR DRUGS USED IN THE TREATMENT OF GASTRIC ULCERS

Panfilova H.L., Hamza Ramzi, Chernukha V.M., Tereshchenko L.V.,

Lebedyn A.M., Korzh Iu.V., Iurchenko G.M

National University of Pharmacy, Kharkov, Ukraine

economica@nuph.edu.ua

Annotation. The article presents the results of the analysis of the global pharmaceutical market of anti-ulcer drugs. Its structure is presented in accordance with the pharmacotherapeutic group of drugs used in the treatment of gastric ulcers. Forecast data on sales of anti-ulcer drugs for 2025-2027 are provided. The main pharmaceutical companies that position anti-ulcer drugs on the world pharmaceutical market are identified and the peculiarities of its development in the dynamics of the years are outlined.

Key words: *stomach ulcer, global pharmaceutical market, anti-ulcer drugs, pharmaceutical support for gastroenterology patients*

Introduction. The main direction of the state policy in the field of health care is to provide the population with affordable, effective and high-quality drugs [2, 3, 10]. To solve this problem, it is necessary to introduce various mechanisms that regulate the circulation of medicines. Such mechanisms of state regulation of drug circulation operate in all national pharmaceutical markets [4, 10, 13]. Providing the population with pharmaceuticals is of great social importance [2-4, 8, 9]. However, the solution of this problem is of particular importance for chronic patients who take drugs for a long period of time [10]. So, for example, patients with gastric ulcer need long-term use of drugs, primarily to prevent the occurrence of relapses of the disease [1, 4, 11].

Peptic ulcer disease affects four million people worldwide annually and has an estimated lifetime prevalence of 5,0–10,0% in the general population [13]. A

stomach ulcer affects people of almost all ages, regardless of gender and country of residence [1, 11].

Purpose. To analyze the dynamics of development, as well as the structure of the segment of the global pharmaceutical market of anti-ulcer drugs.

Methods and materials. The object of the study is modern approaches to the organization of effective and affordable pharmaceutical care for the population as a whole and for patients with gastric ulcer disease in particular.

The subject of the study was data presented in open information access on the sale of anti-ulcer drugs on the world pharmaceutical market [4, 5], as well as indicators of the structure of sales of these drugs by pharmacotherapeutic groups and the sales forecast for 2025-2027.

In the research we used historical, logical, comparative, graphical methods. In addition, we also used the methods of mathematical and statistical analysis of price data and drug availability indicators

Research results. One of the important components of the international economic system is the pharmaceutical market. This is a complex structure that plays a special role in the development of any state. In the pharmaceutical market, the interests of various entities representing drugs and pharmaceutical services are realized.

Despite the coronavirus pandemic, the global pharmaceutical market is characterized by growth. The sales of those drugs that have significant prospects in practical medicine have especially increased. For 2022, the total global pharmaceutical market was estimated at 1.48 trillion U.S. dollars. This is a only a slight increase from 2021 when the market was valued at 1.42 trillion U.S. dollars. The pharmaceutical market plays a key role in how people get medications and what people pay for medication [4, 5].

In the organization of effective medical support for the population, the issues of achieving the physical availability of medicines that are presented on the pharmaceutical market are of great importance. Therefore, the purpose of our

further research was to analyze the segment of the global pharmaceutical market, which presents preparations used in the treatment of stomach ulcers. In the research, we used data that are presented in the public domain on websites on the Internet, as well as in specialized literary sources [4, 5].

The global peptic ulcer drugs market size was valued at \$4,25 billion 2019 & is projected to reach \$5,15 billion by 2027, exhibiting a CAGR of 2,4% in forecast period [45,46]. The indicators of sales of antiulcer drugs in the global pharmaceutical market in 2019-2022 and the indicators that are forecast for 2023-2025 are shown in Fig. 2.1. In 2022, sales were \$4.71 billion, up 10.8% from 2019 (Fig. 1).

As a result of the analysis of data from special sources of information, it can be said that the largest volumes of sales of antiulcer drugs are carried out in the European and American pharmaceutical markets. However, it should be noted that every year the sales of antiulcer drugs in the pharmaceutical markets of countries represented in Latin America are increasing [5]. In addition, the activation of the sale of anti-ulcer drugs in China, India and North Africa is of great importance in increasing these sales [4]. The increase in the consumption of generic drugs around the world also significantly affects the increase in the sale of antiulcer drugs in the global pharmaceutical market. Policies to stimulate the consumption of generic drugs, which have recently been implemented in many countries, also affect the increase in the volume of sales of antiulcer drugs.

The main companies that represent anti-ulcer preparations on the world pharmaceutical market include: F. Hoffmann-La Roche Ltd. (Switzerland); Mylan N.V. (U.S.); Teva Pharmaceutical Industries Ltd. (Ireland); Sanofi (France); Pfizer Inc. (U.S.); GlaxoSmithKline plc (U.K.); Novartis AG (Switzerland); Merck & Co., Inc. (U.S.); Allergan (Ireland); AstraZeneca (U.K.); Johnson & Johnson Private Limited (U.S.); Hikma Pharmaceuticals PLC (U.K.); Bristol-Myers Squibb Company (U.S.); Bayer AG (Germany); Boehringer Ingelheim International GmbH. (Germany); Dr. Reddy's Laboratories Ltd. (India); Gilead Sciences, Inc.

(U.S.); Amgen Inc. (U.S.); Eli Lilly and Company (U.S.); AbbVie Inc. (U.S.); Lupin (India); Allergan (Ireland).

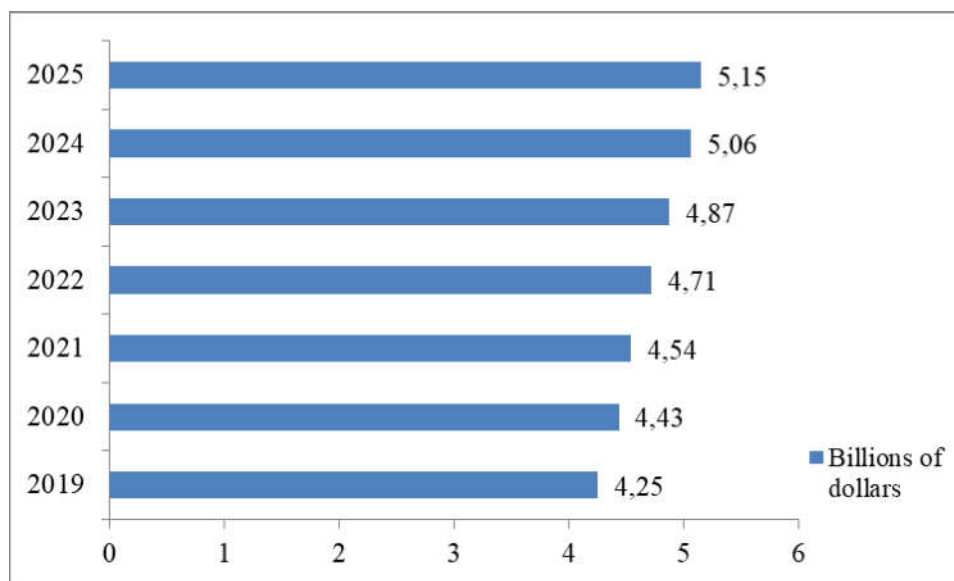


Fig. 1. Analysis of sales of antiulcer drugs in the global pharmaceutical market in 2019-2022 and indicators that are predicted for 2023-2025

In the following figures 2. and 3. the data of the analysis of sales of antiulcer preparations in the North American segment of the pharmaceutical market are presented. Over the period from 2016 to 2022, drug sales in the North American segment of the pharmaceutical market increased from \$1.71 billion to \$1.87 billion. Thus, the volume of sales of drugs increased by 9.4%. It should be noted that the North American segment of the pharmaceutical market is characterized by a systematic increase in sales during 2016-2022.

The indicators of drug sales in the North American segment of the pharmaceutical market, which are forecast for the period from 2023 to 2027, are shown in Fig. 2.2. As can be seen from Figure 2.3, drug sales in 2027 are expected to reach USD 2.05 billion. This is 7.8% more than similar data that we can observe in 2023. In 2025, drug sales may have a high growth rate (%) compared to the data that was presented in 2024. Drug sales could reach \$1.97 billion in 2025.

An analysis of the list of companies representing anti-ulcer drugs in the world suggests that the leading positions belong to those companies that represent the North American and European segments of the pharmaceutical market. However, it should be noted that the influence of Indian companies on the dynamics of sales of antiulcer drugs in the world is also very high.

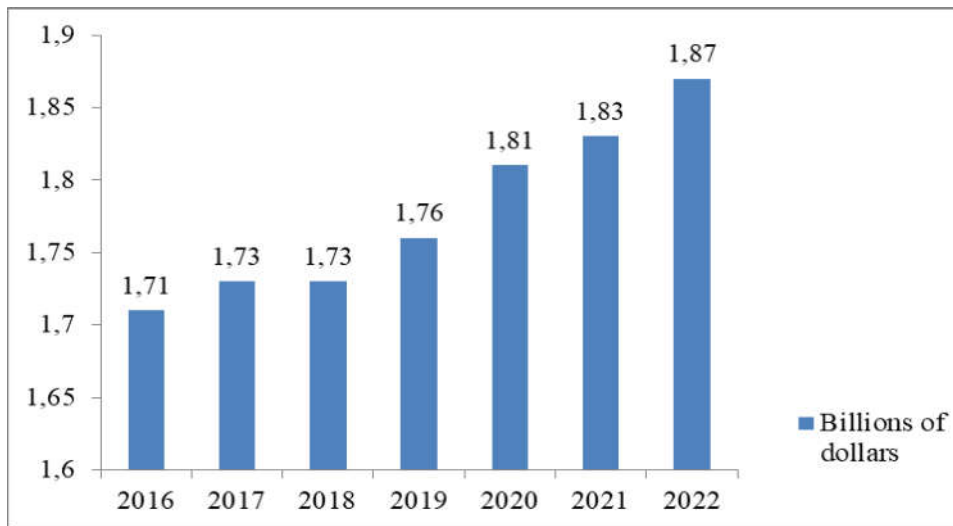


Fig. 2. Analysis of the dynamics of the development of the North American segment of the pharmaceutical market, which presents anti-ulcer drugs for the period from 2016 to 2022

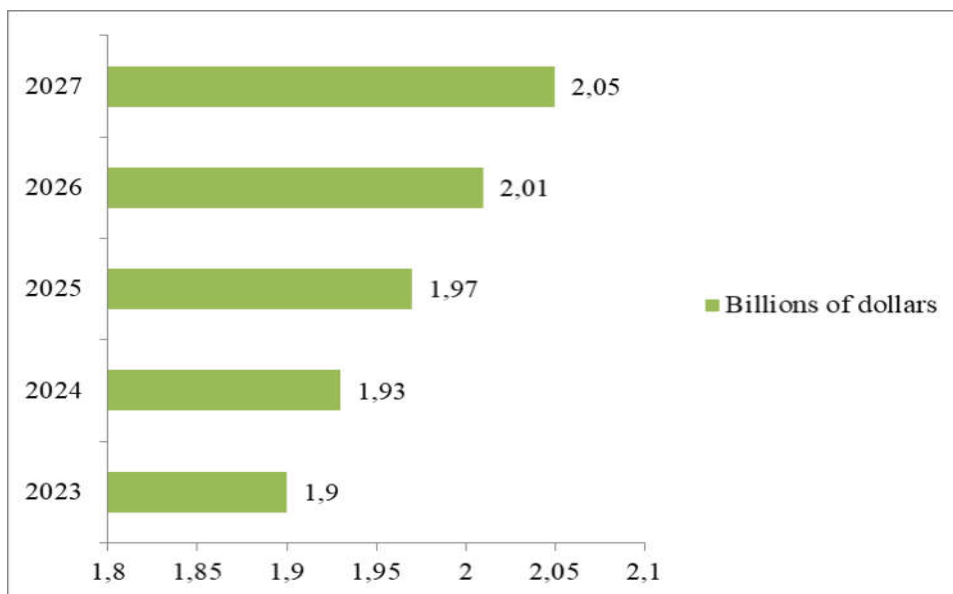


Fig. 3. Sales of antiulcer drugs in the North American segment of the global pharmaceutical market, which are forecast for the period from 2023 to 2027

In the pathogenetic and symptomatic treatment of gastric ulcers, drugs from different pharmacotherapeutic groups are used. In the past few decades, important changes have taken place in practical medicine in the organization of medical care for patients with gastric ulcer [1, 11]. Priorities in the treatment of these patients have changed significantly. We have already mentioned this in our work. This significantly affected the sales volumes of antiulcer drugs, which are presented in different pharmacotherapeutic groups [1, 11, 13]. Figure 4 shows the structure of sales of antiulcer drugs in the global pharmaceutical market according to 2019 data.

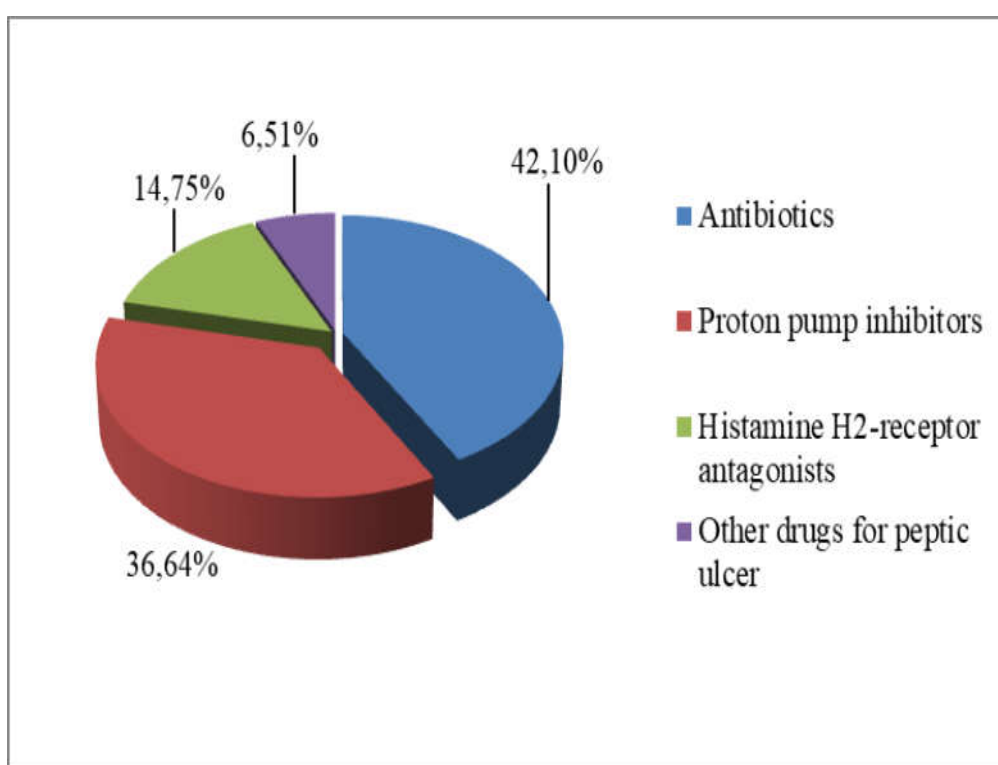


Fig. 4. Structure of sales of antiulcer drugs in the global pharmaceutical market according to 2019 data [46].

As you can see, the largest volumes in sales of antiulcer drugs, expressed in %, are occupied by antibiotics (42.1%). This is due to the priorities that are currently being implemented in the process of providing effective medical and pharmaceutical care to patients with stomach ulcers. Treatment of infection, which is one of the key etiological factors in the occurrence of gastric ulcers, is of great

importance in modern gastroenterology [1, 11]. Drugs from the group of proton pump inhibitors account for 36.65% of the sales of antiulcer drugs that were sold on the global pharmaceutical market in 2019.

The segment of antiulcer drugs in the global pharmaceutical market has prospects for development, as research continues to evaluate the clinical effectiveness of drugs. In addition, sales of these drugs may increase due to the growth of generic drugs that are represented in the national pharmaceutical markets. We believe that anti-ulcer drugs also have good development prospects in the Moroccan pharmaceutical market. The vast majority of antiulcer drugs belong to the group of drugs dispensed in pharmacies without a doctor's prescription. In addition, the country's government has recently pursued a policy that is aimed at stimulating the consumption of generic drugs. This is carried out in order to reduce the costs associated with providing the country's population with affordable and effective medical and pharmaceutical care. All this will, of course, affect the dynamics of sales of antiulcer drugs in the pharmaceutical market of Morocco.

Conclusions

1. The segment of antiulcer drugs is the most important component of the global pharmaceutical market. Anti-ulcer drug sales in 2019 were \$4.25 billion. It has been established that the volume of sales of antiulcer drugs in the global pharmaceutical market is steadily growing. The average annual growth rate (%) of this segment is 2.4%.
2. According to forecasts, in 2027, the volume of sales of antiulcer drugs in the global pharmaceutical market may be equal to 5.15 billion US dollars/
3. The largest sales volumes of antiulcer drugs are presented in the North American and European segments of the global pharmaceutical market.
4. In most cases, antiulcer drugs are positioned on the global pharmaceutical market by American and European companies. At the same time, it should be noted that every year the role of Indian companies in this segment of the market is increasing.

5. An important component of the global market for antiulcer drugs is the North American segment. Thus, it was established that the volume of sales of drugs on it from 2016 to 2022 will increase from 1.71 billion US dollars to 1.87 billion US dollars. Experts predict that this figure in 2027 may be 2.05 billion US dollars.
6. We found that the largest volume of sales, expressed in% in 2019, had drugs that are used in the etiological treatment of gastric ulcers. The volume of sales of antibiotics used in the treatment of gastric ulcers amounted to 42.1% (2019) of the total sales in the global segment of antiulcer drugs. Further, with a slight margin in the sales rating, drugs from the group of proton pump inhibitors (36.64%) were presented.
7. Overall, we believe that the anti-ulcer segment has significant growth potential globally. In addition, significant sales of these drugs can be expected in those countries that have policies aimed at stimulating the consumption of generic drugs.
8. This will be especially true for chronic patients who require the use of drugs for a long period of time. This group includes patients with gastric ulcer, which can become aggravated and have a chronic type of course throughout life.

References

1. Benjamin Scally, Jonathan R. Emberson, Enti Spata et al. Effects of gastroprotectant drugs for the prevention and treatment of peptic ulcer disease and its complications: a meta-analysis of randomised trials. *The Lancet.Gastroenterol & Hepatology*. 2018, Vol. 3(4), P. 231-41.
2. Bush P.W., Daniels R. Health care systems and transitions of care: implication on interdisciplinary pharmacy services. *N C Med J.*, 2017, Vol. 78 (3), P. 177-180.

3. New tool to enhance role of pharmacists in health care. URL: <http://www.who.int/mediacentre/news/new/2006/nw05/en/index.html> (Last accessed: 13.01.2024)
4. Pharmacy workforce predicted to grow year on year in new report. Press FIP - International Pharmaceutical Federation. URL: https://fip.org/newsandpublications_press (Date of accessed 30.01.2024)
5. Report from IQVIA Institute. Global Market for Medicines to Rise to \$1.9 Trillion by 2027 URL: <https://www.iqvia.com/newsroom/2023/01/global-market-for-medicines-to-rise-to-19-trillion-by-2027-says-report-from-iqvia-institute> (Date of access 11.02. 2023)
6. Revenue of the worldwide pharmaceutical market from 2001 to 2022. URL: <https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/> (Last accessed: 12.01.2024)
7. Sarah Peiffer, Matthew Pelton, Laura Keeney, Eustina G Kwon, Richard Ofosu-Okromah et al.. Risk factors of perioperative mortality from complicated peptic ulcer disease in Africa: systematic review and meta-analysis. URL: <https://bmjopengastro.bmj.com/content/bmjgast/7/1/e000350.full.pdf> (Date of access 19.01.2024).
8. Satoh K., Yoshino J., Akamatsu T. et al. Evidence-based clinical practice guidelines for peptic ulcer disease. *Journal of Gastroenterology*, 2016, Vol. 51, P. 177-194.
9. Schuemie, M.J.; Herings, R.; Gini, R.; Mazzaglia, G.; Picelli, G.; et al. Risk of upper gastrointestinal bleeding from different drug combinations. *Gastroenterology*, 2014, 147, P.784-792.
10. Scott MA, Heck JE, Wilson CG. The integral role of the clinical pharmacist practitioner in primary care. *N C Med J*. 2017, Vol. 78(3), P. 181-185.
11. Strand, D.S.; Kim, D.; Peura, D.A. 25 years of proton pump inhibitors: A comprehensive review. *Gut Liver*, 2017, 11, P. 27-37.

12. The Role of Pharmacists in a Changing Health Care Environment. URL: <https://cvshealth.com/thought-leadership/the-role-of-pharmacists-in-a-changing-health-care-environment> (Date of access 29.02. 2024)
13. [Xin Xie](#), [Kaijie Ren](#), [Zhangjian Zhou](#), [Chengxue Dang](#), [Hao Zhang](#). The global, regional and national burden of peptic ulcer disease from 1990 to 2019: a population-based study. *BMC. Gastroenterology*. 2022. Vol. 22, Art. number: 58. URL: <https://bmcgastroenterol.biomedcentral.com/articles/10.1186/s12876-022-02130-2> (Date of access 11.01. 2024)

Резюме. В статті представлені результати аналізу світового фармацевтичного ринку противиражкових препаратів. Представлена його структура у відповідності до фармакотерапевтичної групи препаратів, які використовуються у лікуванні виразки шлунку. Наведені дані прогнозування обсягів продажів противиражкових препаратів на 2025-2027 роки. Визначені основні фармацевтичні компанії, які позиціонують препарати противиражкової дії на світовому фармацевтичному ринку та окреслені особливості його розвитку у динаміці років.

Ключові слова: виразка шлунку, світовий фармацевтичний ринок, противиражкові препарати, фармацевтичне забезпечення гастроентерологічних хворих