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BONDARENKO Olena,
Doctor of Sciences (Economics), Professor,
Head of the Department of Marketing
State University of Trade and Economics
19, Kyoto St., Kyiv, 02156, Ukraine

ORCID: 0000-0002-5990-2522
o.bondarenko@knute.edu.ua

MELNYCHENKO Oleksandr,
PhD Student
of the Department of Marketing
State University of Trade and Economics
19, Kyoto St., Kyiv, 02156, Ukraine

ORCID: 0000-0001-8642-0388
o.v.melnychenko@knute.edu.ua

BRAND MANAGEMENT OF PHARMACEUTICAL ENTERPRISES UNDER A LARGE-SCALE CRISIS

With the beginning of hostilities, all pharmaceutical companies were forced to suspend their marketing activities. But from April-May 2022, promotional activities began to resume. The presented analysis of the pharmaceutical market of Ukraine for 2022 using the example of two groups of drugs – prescription and over-the-counter (according to the analytical system of market research PharmXplorer"/ "Pharmstandard") shows that significant opportunities have opened up for those pharmaceutical companies that have timely resumed marketing activities with brand promotion. Under these conditions, timely response to new challenges, promptness and flexibility in making marketing decisions become the main tasks of the functioning of the brand management system. It is those brands whose managers realize that promotion in wartime is both a risk and an opportunity at the same time, will become trendy, will be able to optimize efforts and find non-standard solutions for positioning and promotion. The aim of the research was to analyze whether the military situation affected the development of the pharmaceutical market of Ukraine and to determine the main strategic decisions in the brand management system to increase the efficiency of the functioning of pharmaceutical business enterprises. Using

БОНДАРЕНКО Олена,
д. е. н., професор, завідувач кафедри маркетингу
Державного торговельно-економічного
університету
вул. Кіото, 19, Київ, 02156, Україна

ORCID: 0000-0002-5990-2522
o.bondarenko@knute.edu.ua

МЕЛЬНИЧЕНКО Олександр,
аспірант кафедри маркетингу
Державного торговельно-економічного
університету
вул. Кіото, 19, м. Київ, 02156, Україна

ORCID: 0000-0001-8642-0388
o.v.melnychenko@knute.edu.ua

БРЕНД-МЕНЕДЖМЕНТ ФАРМАЦЕВТИЧНИХ ПІДПРИЄМСТВ ЗА МАСШТАБНОЇ КРИЗИ

З початком воєнних дій усі фармацевтичні компанії були вимушені призупинити свої маркетингові активності. Проте вже з квітня-травня 2022 р. промоційна діяльність почала відновлюватися. Результати аналізу фармацевтичного ринку України за 2022 р. на прикладі двох груп препаратів – рецептурних та безрецептурних (за даними аналітичної системи дослідження ринку "PharmXplorer"/"Фармстандарт") свідчать про те, що суттєві можливості відкрилися перед тими фармацевтичними компаніями, які вчасно відновили маркетингові активності з просування брендів. За цих умов вчасне реагування на нові виклики, оперативність та гнучкість у прийнятті маркетингових рішень стають основними завданнями функціонування системи бренд-менеджменту. Саме ті бренди, менеджери яких усвідомлюють, що промоція у воєнний час це і ризики, і можливості одночасно, стануть у тренді, зможуть оптимізувати зусилля та знаходити нестандартні рішення з позиціювання та просування. Метою дослідження є оцінка впливу військового стану на розвиток фармацевтичного ринку України та обґрунтування основних стратегічних рішень у системі бренд-менеджменту для підвищення ефективності функціонування підприємств *such methods as generalization, analysis and synthesis, comparison, tabular and graphic representation, it was found that despite the negative impact of the war, the demand for medicines remains high. However, the efficiency of enterprises is determined by the chosen marketing strategy. Therefore, correction, adaptation and rapid response to market needs are important for pharmaceutical business enterprises in wartime. For this, it is important for pharmaceutical companies to take a clear social position and adjust their promotional efforts according to changes in consumer priorities. At the same time, it is advisable to constantly plan and implement marketing activities for the promotion of brands. This also applies to drugs – almost every brand can be replaced by another generic drug. Timely restoration and continuation of promotional activity of brands in the conditions of martial law is, on the one hand, a marketing challenge, but, as the results of last year show, it is also a great opportunity to gain a leadership position and strengthen the brand's consumer loyalty.*

Keywords: pharmaceutical market, brand, prescription (Rx) and over-the-counter (OTC) drugs, consumer demand, promotional activity, brand management.

фармацевтичного бізнесу. З використанням методів узагальнення, аналізу і синтезу, порівняння, табличного та графічного зображення встановлено, що попри негативний вплив війни, попит на лікарські засоби залишається високим. Проте ефективність діяльності підприємств визначається обраною маркетинговою стратегією. Тому важливим для підприємств фармацевтичного бізнесу у воєнний час є корекція, адаптація та швидке реагування на потреби ринку. Фармацевтичним компаніям важливо зайняти чітку соціальну позицію та корегувати свої промоційні зусилля згідно зі змінами пріоритетів споживачів. При цьому маркетингові активності для просування брендів доцільно постійно планувати та впроваджувати. Це стосується і ліків – практично кожен бренд можна замінити іншим препаратом-генериком. Своєчасне відновлення та продовження промоційної активності брендів в умовах воєнного стану – це маркетинговий виклик, але, як показують результати минулого року, це й великі можливості завоювати лідерську позицію та посилити лояльність споживачів бренду.

Ключові слова: фармацевтичний ринок, бренд, рецептурні та безрецептурні препарати, споживчий попит, промоційна активність, управління брендом.

JEL Classification: I10, I11, M30, M31, M37.

Introduction

The pharmaceutical market of Ukraine in the pre-war period was a very complex, multi-level system that was constantly developing and growing. Even in 2021, in the conditions of quarantine restrictions related to the COVID-19 pandemic, the Ukrainian pharmaceutical market showed double digit growth in money compared to 2020 (Kirsanov, 2022). The key characteristics of the pharmaceutical market of Ukraine in the last pre-war years were a high level of competition, a fierce struggle for the consumer, a high level of import dependence, specific promotion technologies and a strong level of state regulation with a low level of state funding.

The full-scale invasion of the Russian Federation on the territory of Ukraine on February 24, 2022, led to an economic and humanitarian crisis, active migration of the population, a decrease in income, and a rapid increase in unemployment. The war dealt a devastating blow to Ukraine's economy. Of course, it also has led to a slowdown in the development of the pharmaceutical market. That is why changes in brand management strategy in the conditions of war become one of the decisive tools for strengthening the positions and competitiveness of pharmaceutical enterprises. Marketing and brand management, in turn, play a key role among the effective tools for the recovery and development of the pharmaceutical market of Ukraine.

Theoretical and methodological aspects of marketing research and principles of brand management were laid down by such outstanding classics as D. Aaker, T. Ambler, D. Atkin, M. Porter, K. Keller, F. Kotler, J. Kapferer, D. Trout, P. Drucker, etc. Modern Ukrainian and foreign scientists also pay considerable attention to the study of the features of brand management in new conditions. T. Heading, K. Knudzen and M. Bjer (2020), in Brand Management: Mastering Research, Theory, and Practice, highlight the importance of brand management in today's environment and emphasize that a new era is soon upon us when a deeper understanding of different brand aspects is needed, and businesses to strengthen their competitive advantage must make brand management a top priority. Professor K. Baumgarth (2020), in his study of the behavior of brands during a crisis, came to the conclusion that strong brands do not just survive crises, but thrives. The right brand management strategy can help brands emerge from any crisis stronger than ever before. T. Kunkel and R. Biscaia (2020) analyzed the current state of branding research on the example of sports brands and paid special attention to the relationships between related brands and the study of consumer buying behavior. M. Fetscherin and A. Sampedro (2019), investigating the concept of brand "forgiveness", made a conclusion that about 50 % of consumers are unlikely to ever forgive a brand for serious violations, and among those who do, they are more likely to forgive performance failures but never will forgive if the violation concerns the image or values of the brand.

Many studies by domestic scientists are devoted to the study of brand management in ensuring the competitiveness of businesses. In their researches of N. Shmatko, M. Panteleev, M. Karminska-Bielobrova and T. Myroshnyk (2022) it was found that when developing a company's strategy, it is necessary to take into account the value of one's brand and find its key advantages (2020). V. Tytykalo, S. Nevmerzytska in their works conducted a study of modern approaches to evaluating the effectiveness of brand management of the business. A. Mogylova and O. Shershneva (2023) studied the peculiarities of brand management under conditions of economic crisis when demand decreases and competition between brands increases. M. Lyshenko (2023) investigated the problem of forming effective brand management as a means of marketing activities of enterprises. O. Melnychenko and M. Melnychenko (2022). In their research studied and identified effective brand strategies in brand management in wartime conditions using the examples of the activities of 10 leading Ukrainian brands.

The studies of many domestic scientists and practitioners are devoted to applied aspects of branding in the activities of pharmaceutical enterprises. A. Razyk (2020) conducted a study in which they presented the trends and directions of development, the peculiarities of the pharmaceutical market of European countries, and also presented the possibilities of the pharmaceutical market of Ukraine and the strategic directions of its development.

O. Harmatyuk (2022) analyzed the dynamics of the turnover of pharmaceutical products and established the trend of growth of wholesale and retail turnover of these products during the last 5 pre-war years. O. Penkova, I. Korman and O. Semenda (2022) segmented the pharmaceutical market in order to plan the marketing activities of the business and search for investments. A. Fedorchenko, A. Kulyk, and I. Ponomarenko (2023) conducted a study of the use of cluster analysis to identify groups of pharmaceutical enterprises in the pharmaceutical market of Ukraine based on the use of a unified system of performance indicators. There are also the first works in which the development of the pharmaceutical market of Ukraine in the first months was analyzed. For example, S. Lyholat and M. Levitska (2022) evaluated the impact of the war on the pharmaceutical market, presented their forecasts for the further development of the pharmaceutical market of Ukraine and pointed out risk zones for drug manufacturers. L. Shymanovska-Dianych, O. Lozova and I. Yurko (2023), having analyzed the impact of the war on the domestic pharmaceutical market, noted a significant reduction in activity, a decrease in revenues and profits of pharmaceutical companies, which led to the searches for new alternative sources of increasing revenues. However, marketing tools of brand management and adaptive brand strategies under wartime conditions require further detailed analysis.

The aim of this research is to analyze the influence of the state of war on the development of the pharmaceutical market of Ukraine and to justify the main strategic decisions in the brand management system in order to increase the efficiency of the functioning of pharmaceutical enterprises.

To realize the aim, a hypothesis was formed that the state of war in Ukraine negatively affects the development of the pharmaceutical market, and quick response to new challenges and the use of the most effective marketing solutions become the main tasks of brand management in these conditions.

The following general scientific methods as generalization, analysis and synthesis, comparison, tabular and graphic representation were used to test the proposed hypothesis. The information base of the research was legislative and regulatory acts of the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine, the Ministry of Health of Ukraine, and data from analytical studies of the pharmaceutical market by Proxima Research.

The main part of the article highlights internal and external problems of the pharmaceutical business under martial law, changes in demand on the pharmaceutical market with an analysis of the structure of drug consumption, changes in the demand for categories of medicines and dynamics of the average cost of 1 package of imported and domestically produced medicines, marketing activities of brand promotion at the pharmaceutical market such as visits by medical representatives, remote communication, conferences, advertising on television and on the Internet.

1. Marketing problems of pharmaceutical business enterprises

Since the beginning of the war, the marketing environment of pharmaceutical business enterprises has changed significantly. The marketing management systems of pharmaceutical enterprises have faced new problems and challenges due to the influence of internal and external factors.

Internal problems of the pharmaceutical business include the following:

Infrastructure losses. Warehouses with finished goods of pharmaceutical companies and distributors, big pharmacy chains, small retail pharmacies which were located in the occupied territories and in the front-line regions, were lost or underwent significant damage.

Lack of qualified personnel. National migration to Western regions and abroad, the mobilization of men led to problems with personnel.

Issues with the availability of some groups of medicines. Problems with imported raw materials at national drug manufacturers and shortage of imported drugs at distributors' warehouses led to the absence of some groups of medicines, including vital ones. As a result, such crucial medicines for the treatment of diabetes, thyroid diseases, etc. disappeared from the shelves of pharmacies (Weekly Pharmacy online, 2022, June 27).

The main external problems were:

Logistics issues. The increase in fuel prices has led to an increase in the cost of logistics, and, as a result, an increase in the price of medicines. Destruction of logistics routes, the impossibility of delivery to frontline regions and temporarily occupied territories.

The increase in the price of foreign-made raw materials due to the increase in the exchange rate and energy prices in Europe, which also led to an increase in the prices of medicines.

Reduction in the number of consumers. According to the UN, about 6 million Ukrainians remain abroad (Mind, 2022, October 20), and this is about 16 % of the customers-consumers of the pharmaceutical industry in the pre-war period.

Decrease in the purchasing power of the population. According to the State Statistics Service, inflation in Ukraine for 2022 is 26.6 %. According to the NBU, the unemployment rate reached 30 %. In fact only about 60 % of working age people has a job in Ukraine. The employment situation for IDPs is more complicated, only 40 % of them have a job (Zanuda, 2022).

Occupation of 1/5 of the territory of Ukraine. The population of the occupied territories is deprived of access to any medicines and pharmaceutical products, and the de-occupied territories are so destroyed that the opening of pharmacies does not become a priority task.

Significant volumes of humanitarian medical aid. This factor especially had an impact on the pharmaceutical market in the first months of the war, because charitable companies tried to provide medicines not only for the military, but also for civil Ukrainians, providing, first of all, vital medicines.

All these factors, of course, have a negative impact on the further development of the pharmaceutical market of Ukraine.

2. Changes in demand on the pharmaceutical market

At the beginning of the war, Ukrainians were not sure about the possibility of obtaining the necessary medicines whenever needed. This was confirmed by the buying boom at pharmacies in the country at the end of February – beginning of March, when people, especially those with chronic diseases, bought medicines to make their own stock for several months. However since April 2022, a sharp decline in the pharmaceutical market has been observed – almost twice as much as in February 2022 (*Figure 1*).

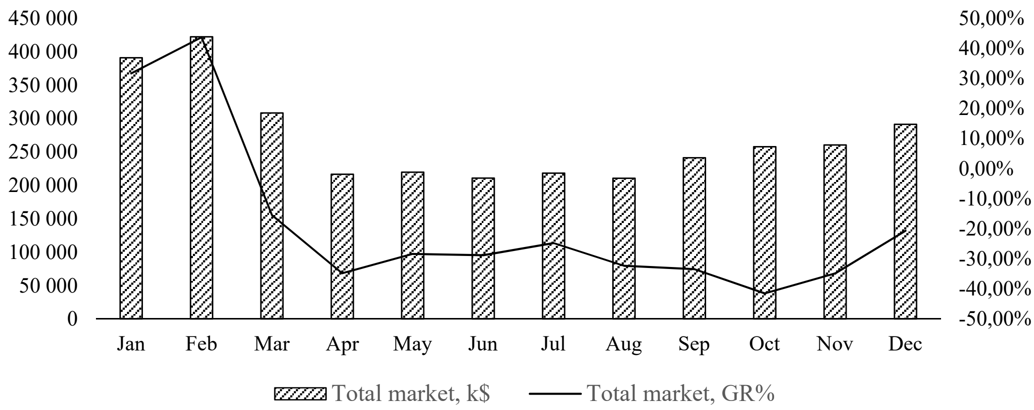


Figure 1. Dynamics of the pharmaceutical market of Ukraine in 2022

Source: compiled by the authors from the data of Proxima Research (2023).

Analytical evidence also suggests that during the wartime pharmaceutical companies with diversified portfolios and a greater share of prescription (Rx) drugs have greater opportunities as compared to over-the-counter (OTC) (Weekly Pharmacy online, 2022, June 27).

The analysis of the sales structure of Rx and OTC drugs for 2022 is presented in *Figure 2*.

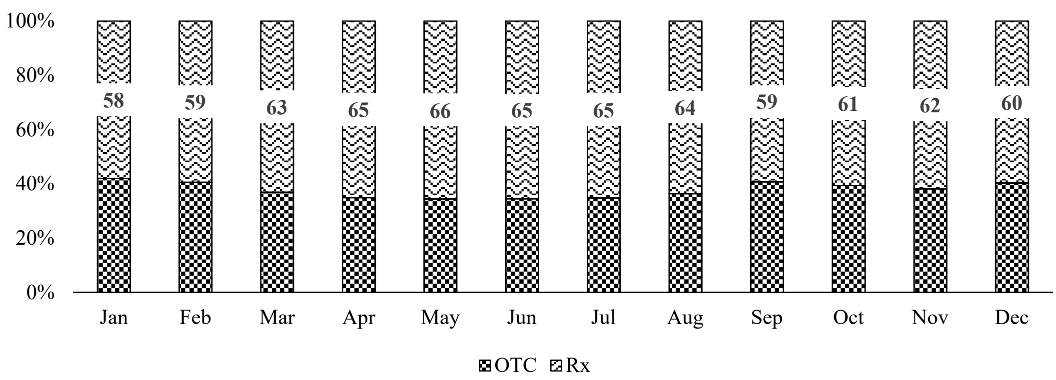


Figure 2. Sales trend of OTC and Rx drugs (%) in 2022 in Ukraine

Source: compiled by the authors from the data of Proxima Research (2023).

As we can see, the war affected the structure of drug consumption. At the beginning of the war, there was a decrease in demand for OTC drugs, as the population was more concerned with the treatment of chronic diseases (Rx drugs). The share of OTC drugs in June-July is 35 % (vs. 43 % before the war, in January 2022). This segment begins to increase at the end of the year and reaches 40 % in December, which is confirmation that the pharmaceutical market of Ukraine started recovering from September 2022.

At the beginning of the war, there was also a shift in consumption towards domestic medicines (*Figure 3*), which is associated with a decrease in the population's income and the choice of lower-cost medicines, i.e. medicines of domestic production. Thus, according to Proxima Research, in March-August 2022, 75 % of the pharmaceutical market (in packages) was shared by the Ukrainian manufacturers. Although the market share of drugs of foreign manufacturers (in packages) began to increase at the end of the year and reached 29 % in December (this was equal to the pre-war level in January 2022), which was a confirmation of the gradual recovery of the pharmaceutical market of Ukraine from September 2022.

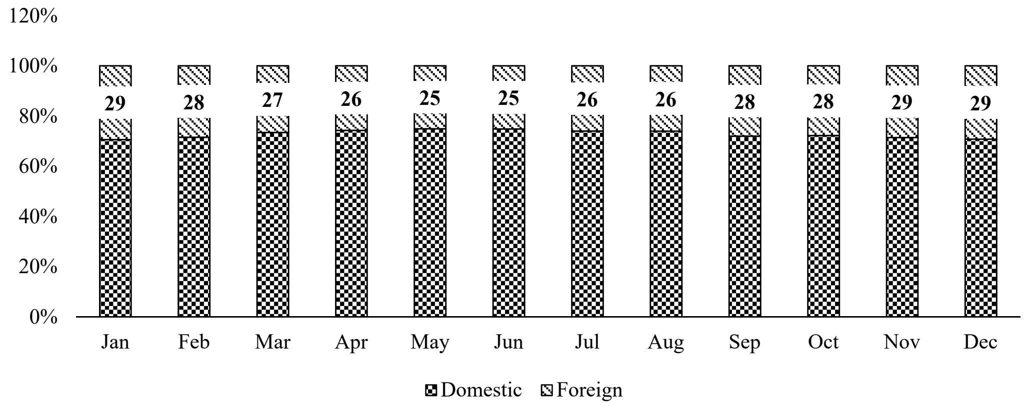


Figure 3. Sales trend of domestic and foreign drugs (%) in Ukraine (2022)

Source: compiled by the authors from the data of Proxima Research (2023).

There have also been changes in the demand for categories of medicines. Thus, if compared to 2022, the demand for painkillers and neurological drugs (sedatives), cardioprotectors, anti-inflammatory and anti-rheumatic drugs has remained at the same high level. On the contrary, the demand for vitamins, dietary supplements and anti-covid drugs (anti-thrombotic drugs, antibiotics) decreased, the consumption of which had increased significantly in previous years – especially the years of the COVID-19 pandemic (Mind, 2022).

This data is confirmed by the analysis of such an indicator as the evolutionary index (EI). EI demonstrates the increase in the share of the investigated category of drugs in the selected period in the market in relation to the same period last year, multiplied by 100. The increase in demand demonstrates EI significantly higher than 100, and, conversely, EI significantly lower than

100 is characteristic of its decrease. Thus, it can be stated that an EI significantly higher than 100 characterizes the growth in 2022 of the demand for dermatological (ATC class D), neurological (ATC class N), cardiovascular drugs (ATC class C) and drugs that affect the musculoskeletal system device (ATC class M) (*Table 1*). Conversely, the EI significantly less than 100 characterizes a decrease in the demand for antibiotics (ATC class J) and antithrombotic drugs (ATC class B).

Table 1

Dynamics of medicinal products sales according to the ATC classification in Ukraine, 2022

ATC class (code)	ATC class	Sales, k. of units	Growth, 2022/2021, %	EI
TOTAL pharmaceutical market		845 105	–20.87	100
N	Nervous system	162 887	–14.48	108
A	Alimentary tract and metabolism	153 652	–21.25	100
C	Cardiovascular system	134 633	–15.48	107
R	Respiratory system	115 094	–24.28	96
D	Dermatological	68 514	–13.55	109
M	Musculo-sceletal system	65 047	–15.22	107
J	General antiinfectives for systemic use	53 500	–37.66	79
B	Blood and blood forming organs	43 860	–34.74	82
G	Genito urinary system and sex hormones	17 778	–19.15	102
S	Sensory organs	15 746	–21.47	99
H	Systemic hormonal preparations, excl. sex hormones	6 502	–23.65	96
P	Antiparasitic products, insecticides and repellents	3 733	–24.80	95
L	Antineoplastic and immunomodulating agents	2 472	–30.95	87
V	Various	1 686	–45.44	69

Source: constructed by the authors from the data of Proxima Research (2023).

The average price of a drug package at the end of 2022 increased by more than 30 % as compared to the price at the beginning of 2022. Moreover, the prices of both imported drugs and drugs of domestic manufacturers have risen. And if the increase in prices for imported medicines was connected with a change (increase) in the official exchange rate of the hryvnia to the US dollar by 25 % in July 2022, the increase in prices for domestic medicines can be explained by the fact that most of the substances from which they are made have foreign origin, so their value also depends on the exchange rate.

As a result of such a price increase, the value of the brand (the original drug) decreases, and the first thing that worries both consumers and medical professionals is the optimal price/quality ratio (What pharmacists are talking about: the results of a "military" study, 2022). And in this case, domestic manufacturers have an advantage, because domestically produced medicinal goods are more than 2.5 times more affordable compared to foreign ones (*Table 2*).

Table 2

Dynamics of the average cost of 1 package of imported and domestic produced medicines in Ukraine, 2022

Medicines	Average price of a drug package, UAH	
	Jan 2022	Dec 2022
Foreign	195.91	254.65
Domestic	74.23	97.37

Source: constructed by the authors from the data of Proxima Research (2023).

Consequently, in the conditions of martial law, the structure of drug consumption changed, the share of consumption of domestically produced drugs and the average cost of drug package increased.

3. Marketing activities of brand promotion in the pharmaceutical business

At the beginning of hostilities, almost all companies suspended their promotional activities – visits of medical representatives to doctors and pharmacies, conferences and advertising. But from April-May 2022, pharmaceutical companies began to restore such promotion channels as visits by medical representatives, remote communication, conferences, advertising on television and on the Internet, and other marketing activities.

Promotion channels are slightly different for prescription and over-the-counter drugs. Let us analyze them using the example of 2 groups of drugs. Diosmin and combinations of diosmin with hesperidin, that is, drugs for the treatment of chronic venous diseases and hemorrhoids, were taken as an example of an over-the-counter group of drugs. And among the prescription drugs are drugs for the treatment of glaucoma (a dangerous eye disease that eventually leads to vision loss).

The drug group of diosmin and combinations of diosmin with hesperidin includes 9 brands registered as medicinal products, including 4 foreign brands and 5 domestic brands. The market leader in this group is the drug Detralex (Servier, France). As can be seen from *Table 3*, the group of these drugs shows a drop according to the results of 2022 which is 16.4 % in packages, but this is a less significant drop than that shown by the entire pharmaceutical market of Ukraine, namely 29.1 % (Kirsanov, 2023).

Table 3
Sales results of diosmin, diosmin+hesperidin drug in packages in 2022 in Ukraine

Brand+Market Organisation	Sales, kpcs	GR, %	EI	MS, %
Total	2 331.7	–16.4	100	100.0
DETRALEX Servier (France)	1 490.8	–11.2	106	63.9
NORMOVEN Kiev vitamin factory JSCo (Ukraine, Kyiv)	510.7	–23.2	92	21.9
PHLEBODIA Innotech (France)	187.9	–27.3	87	8.1
FLEBAVEN KRKA (Slovenia)	63.5	–14.4	102	2.7
DIOFLAN Arterium Corporation OJSC (Ukraine, Kyiv)	32.1	–35.6	77	1.4
AVENUE Farmak OJSC (Ukraine, Kiev)	24.5	–40.0	72	1.0
VASOKET UCB Pharma Sector (Belgium)	11.2	5.6	126	0.5
VENOSMIN Fitofarm PrJSC (Ukraine, Kyiv)	7.0	–32.7	80	0.3
VENORM Unipharma LLC (Ukraine, Kyiv)	4.1	26.0	151	0.2

Source: compiled by the authors from the Proxima Research Data (2023).

If you analyze the results by brands, you can see that there are brands that have demonstrated a better result than the group and the market as a whole, including the market leader in this group – the drug Detralex. The results of the analysis indicate a direct relationship between the sales volume of the drug and the recovery of promotional activity. As can be seen from *Figure 4* and *Figure 5*, the first of the brands that began to resume visiting activity of medical representatives from April 2022, and other marketing activities from July is Detralex. While other drugs were included in the active promotion later: Normoven (Kyiv Vitamin Plant) – from May, Phlebodia (Inotek, France) – from June, Phlebaven (KRKA, Slovenia) – from July. If we analyze the dynamics of promotion channels in 2022 (*Figure 6*), it can be seen that Detralex, starting from June, even shows an increase in activity (advertising on the Internet, on radio, television, in specialized press and conferences) compared to the previous period, i.e. from 2021.

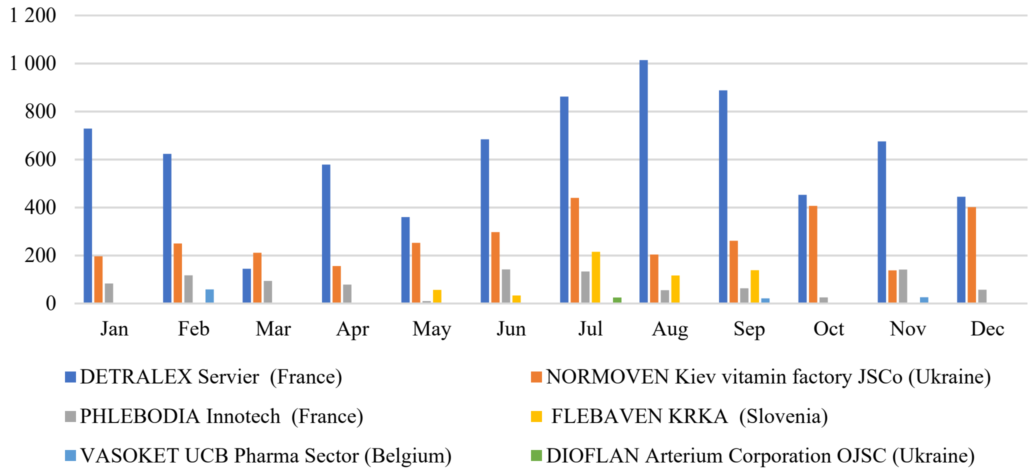


Figure 4. Dynamics of visiting activity of medical representatives in Ukraine (2022), Rec. Cnt. (group of drugs diosmin, diosmin+hesperidin)

Source: (Proxima Research, 2023).

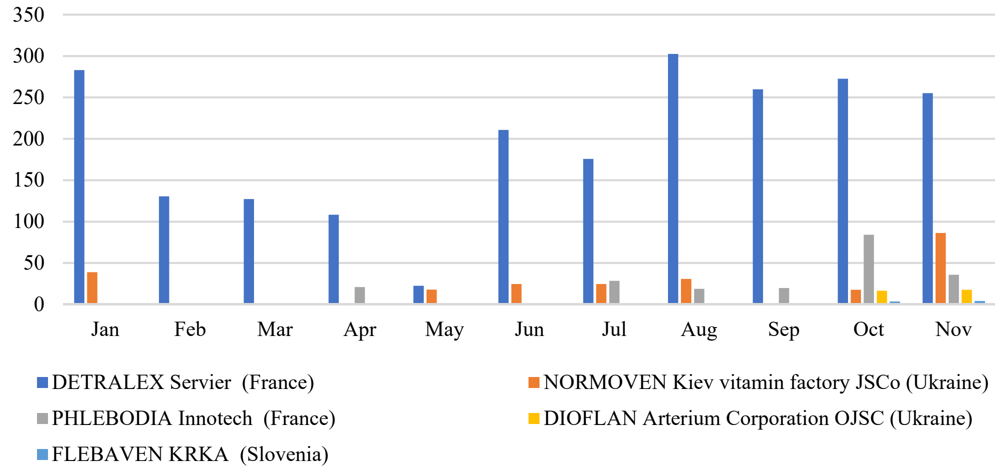
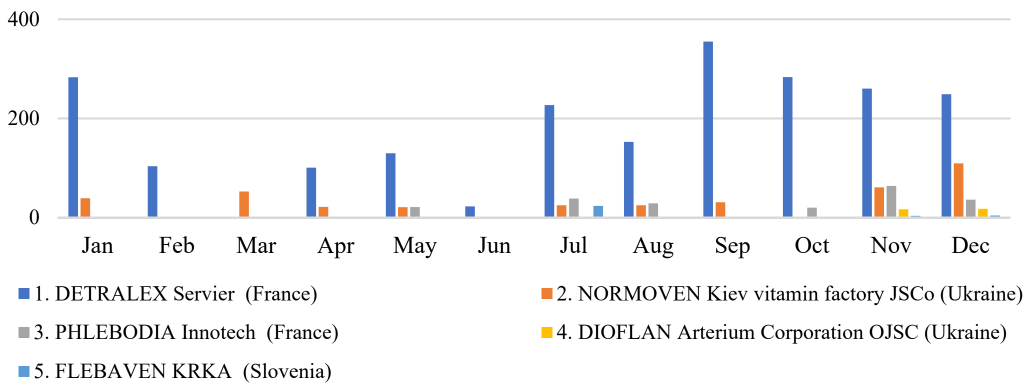


Figure 5. Dynamics of marketing activity in Ukraine (2022), Rec.Cnt (diosmin group, diosmin+hesperidin)

Source: (Proxima Research, 2023).



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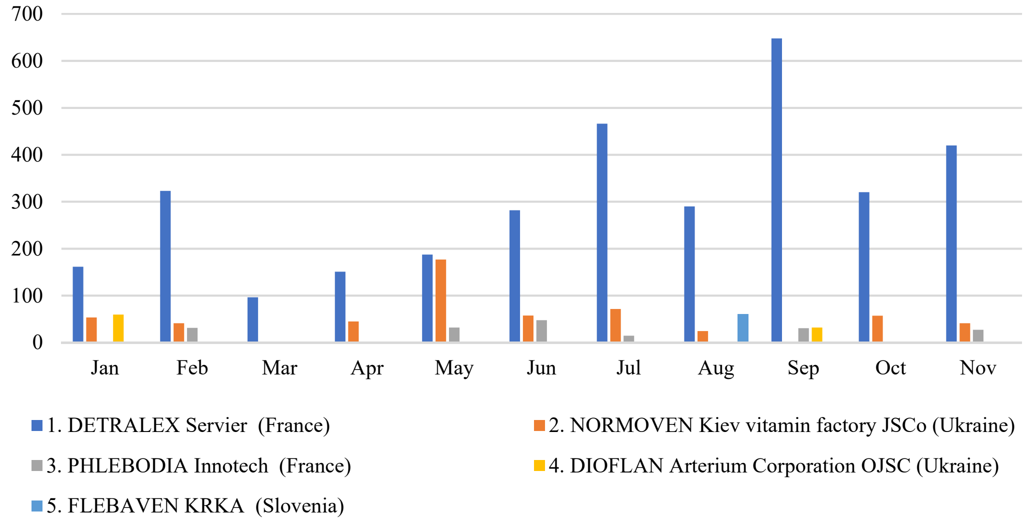
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1. DETRALEX Servier (France)
2. NORMOVEN Kiev vitamin factory JSCo (Ukraine)
3. PHLEBODIA Innotech (France)
4. DIOFLAN Arterium Corporation OJSC (Ukraine)
5. FLEBAVEN KRKA (Slovenia)

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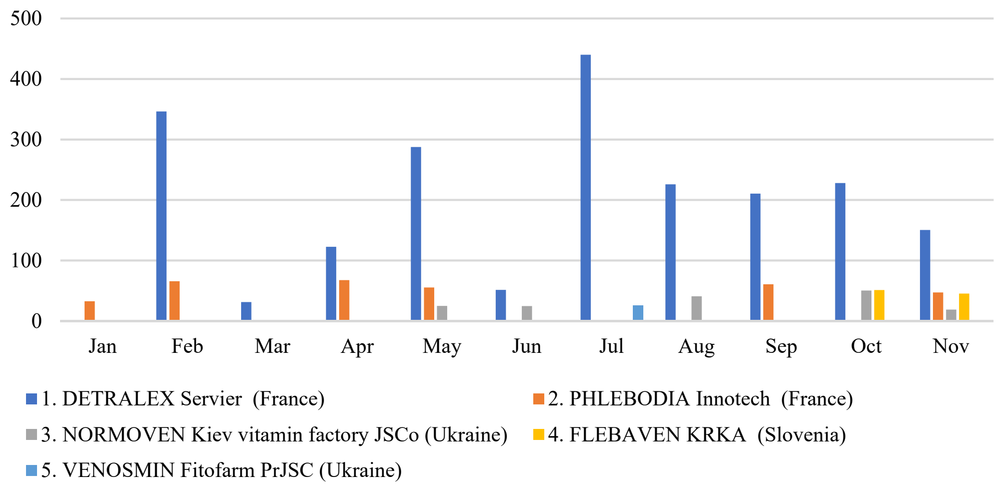
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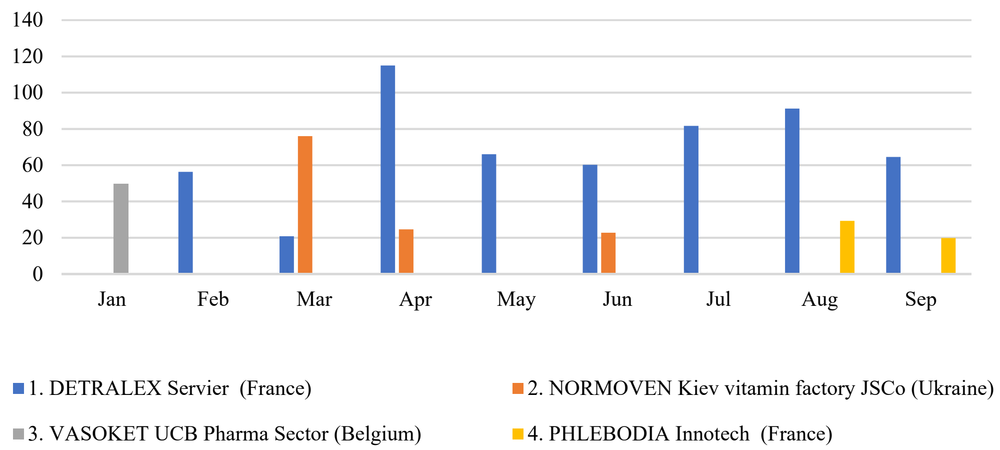
1. DETRALEX Servier (France)
2. PHLEBODIA Innotech (France)
3. NORMOVEN Kiev vitamin factory JSCo (Ukraine)
4. FLEBAVEN KRKA (Slovenia)
5. VENOSMIN Fitofarm PrJSC (Ukraine)

c)


140
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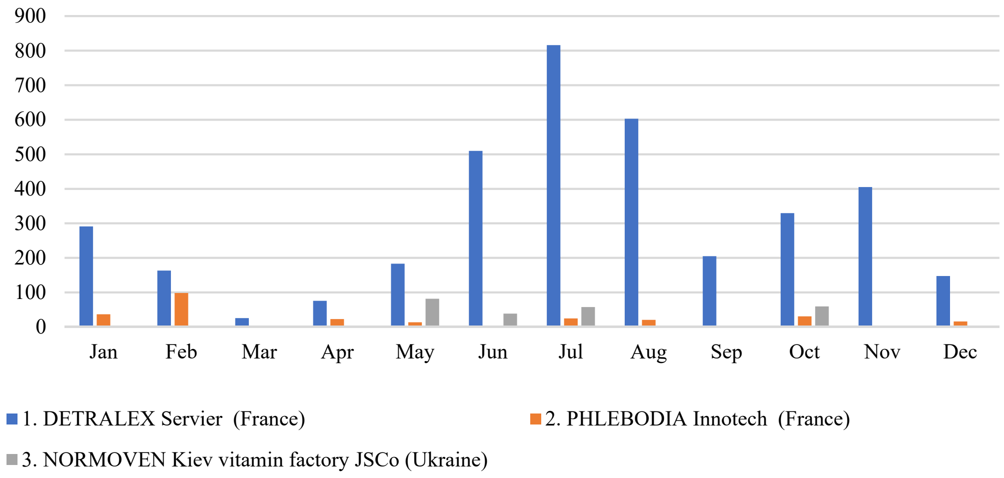
1. DETRALEX Servier (France)
2. NORMOVEN Kiev vitamin factory JSCo (Ukraine)
3. VASOKET UCB Pharma Sector (Belgium)
4. PHLEBODIA Innotech (France)

d)



e)

Figure 6. Dynamics of promotion channels in Ukraine, 2022
Rec.Cnt. (diosmin, diosmin+hesperidin drug group). a) – conferences; b) – advertising in the specialized press; c) – advertising on the Internet; d) – advertising on the radio; e) – advertising on television

Source: (Proxima Research, 2023).

The dynamics of promotional activity is fully correlated with the dynamics of drug sales (*Figure 7*). Therefore, the timely and fully recovered promotional activity enabled the Detralex brand to maintain a leading position in the group and show a better result than the group and the pharmaceutical market as a whole in 2022.

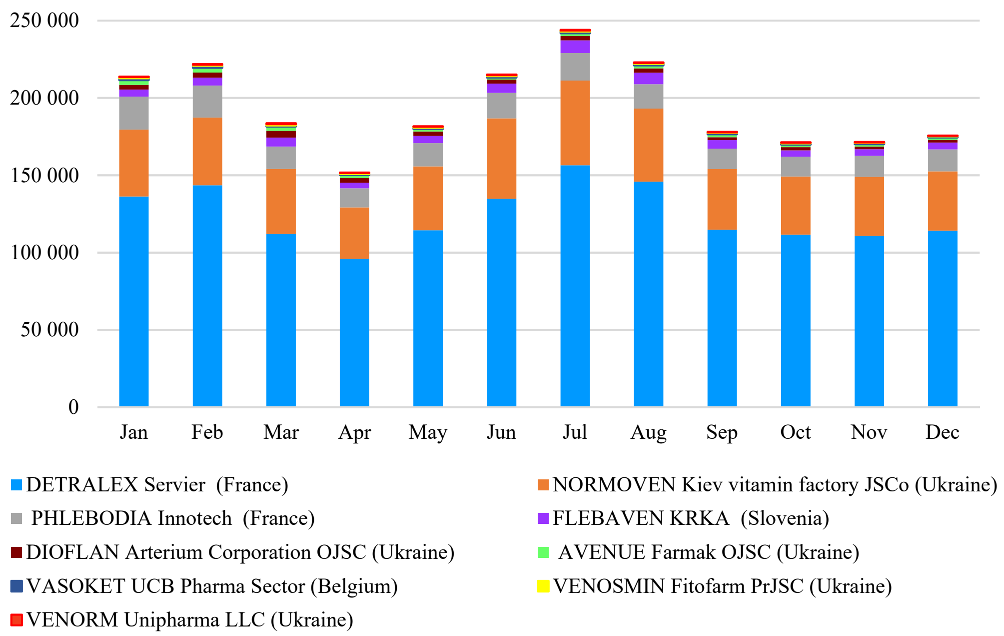


Figure 7. Sales dynamics of diosmin, diosmin+hesperidin in packages in Ukraine (2022)

Source: (Proxima Research, 2023).

The situation is different with prescription drugs, especially with drugs that are vital for the patients with chronic diseases and must be taken on a permanent basis. Let's analyze the market of antiglaucoma drugs, which includes 18 registeredbrands. This group of drugs shows a drop of less than 2 % compared to last year (*Table 4*), which confirms that the drugs are vital. But the analysis of brands shows a 25 % drop in sales of the leader of the group – the original drug Azarga (Novartis, Alcon, Belgium) and drugs of the domestic manufacturer Farmak. And if the significant drop in the drugs Brizol and Brizoton (Farmak) can be explained by the fact that at the beginning of the war, Farmak lost its warehouses with finished goods that caused the drugs disappearance from pharmacies for a while, the situation with Azarga is different.

Table 4

Results of antiglaucoma drugs sales in packages in Ukraine (2022)

Brand+Market Organisation	Sales. kpcs	GR, %	EI	MS,%
Total	963.06	–1.8	100	100.0
AZARGA Novartis Pharma (Switzerland)	232.80	–25.1	76	24.2
MARDOZIA Sona-Pharmexim LLC (Ukraine, Kyiv)	154.86	57.4	160	16.1
DORZAMED World Medicine (Great Britain)	126.71	–0.4	101	13.2
AZOPT Novartis Pharma (Switzerland)	99.44	3.7	106	10.3
DORZITIM Kiev vitamin factory JSCo (Ukraine, Kyiv)	86.35	8.3	110	9.0
DORZOPTIK Polpharma (Poland)	84.75	18.9	121	8.8
ROZACOM Adamed Pharma S.A. (Poland)	54.01	31.4	134	5.6
BRISAL Farmak OJSC (Ukraine, Kiev)	30.35	–47.4	54	3.2
BRIZOTON Farmak OJSC (Ukraine, Kyiv)	24.25	–20.2	81	2.5
COSOPT Santen (Finland)	14.20	0.8	103	1.5
ROZALIN Adamed Pharma S.A. (Poland)	14.00	–12.3	89	1.5
DORZOTYMOL Jadran (Croatia)	12.54	–47.0	54	1.3
REZLOD Sona-Pharmexim LLC (Ukraine, Kyiv)	7.26	59.4	162	0.8
DORSOL Jadran (Croatia)	7.26	1.1	103	0.8
BRINEX Sentiss Pharma (India)	5.23	1 141.6	1 264	0.5
BRINERA Sentiss Pharma (India)	5.11	5 690.4	5 897	0.5
DORZOPT Rompharm Company Georgia LLC (Georgia)	3.91	68.7	172	0.4

Source: compiled by the authors from the data of Proxima Research (2023).

As can be seen from *Figure 8*, Azarga disappeared from pharmacies in June-August 2022, and then reappeared. This indicates shortage of the drug in the warehouse of the company and distributors in Ukraine and problems with logistics from the country of production in the first months of the war. The result is a loss of sales and, that is most important, patients who were forced to switch to other drugs and will not return. The situation with the absence of Azarga was taken as advantage by other players on the market who had sufficient warehouses, thought out logistics in time and ensured the availability of such necessary drugs in pharmacies in the regions. This primarily applies to the Mardozia brand (Sona-Pharmexim, Pharmaten, Greece), which showed a growth of +57 % compared to 2021.

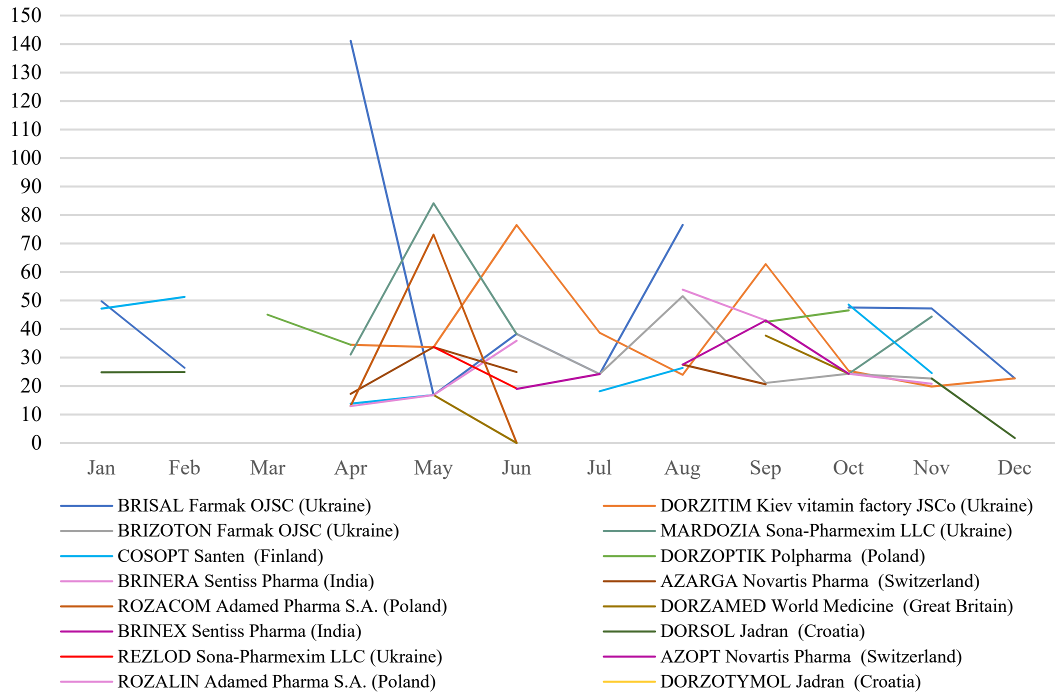


Figure 8. Dynamics of sales of antiglaucoma drugs in packages in 2022 in Ukraine

Source: (Proxima Research, 2023).

If we analyze the promotional activity, namely the visits of medical representatives (*Figure 9*), we do not see a particular difference between the brands or any extraordinary activity, but we clearly see issues with the penetration (that is, the presence of the drug in pharmacies) of Azarga and drugs produced by Farmak (*Figure 10*) and at the same time increase in the penetration of Mardozia. Another factor that played on Mardozia's side in this situation is the price (*Figure 11*). Glaucoma patients are elderly people, so the price of the drug has a very important role in the consumer's choice of the drug. And as we can see from *Figure* 11, the price of Mardozia is almost half the price of the original drug Azarga. This is another confirmation for the statement that in wartime the value of the original drug falls, and patients choose the drug with the best price/quality ratio.

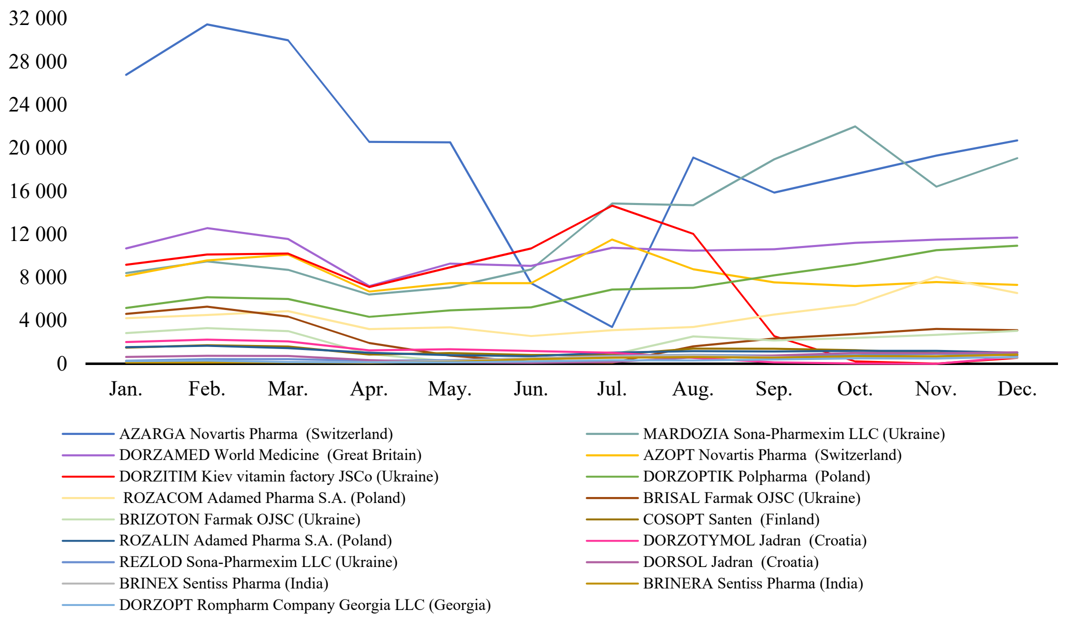


Figure 9. Dynamics of visiting activity of medical representatives in 2022 (group of anti-glaucoma drugs) in Ukraine

Source: (Proxima Research, 2023).

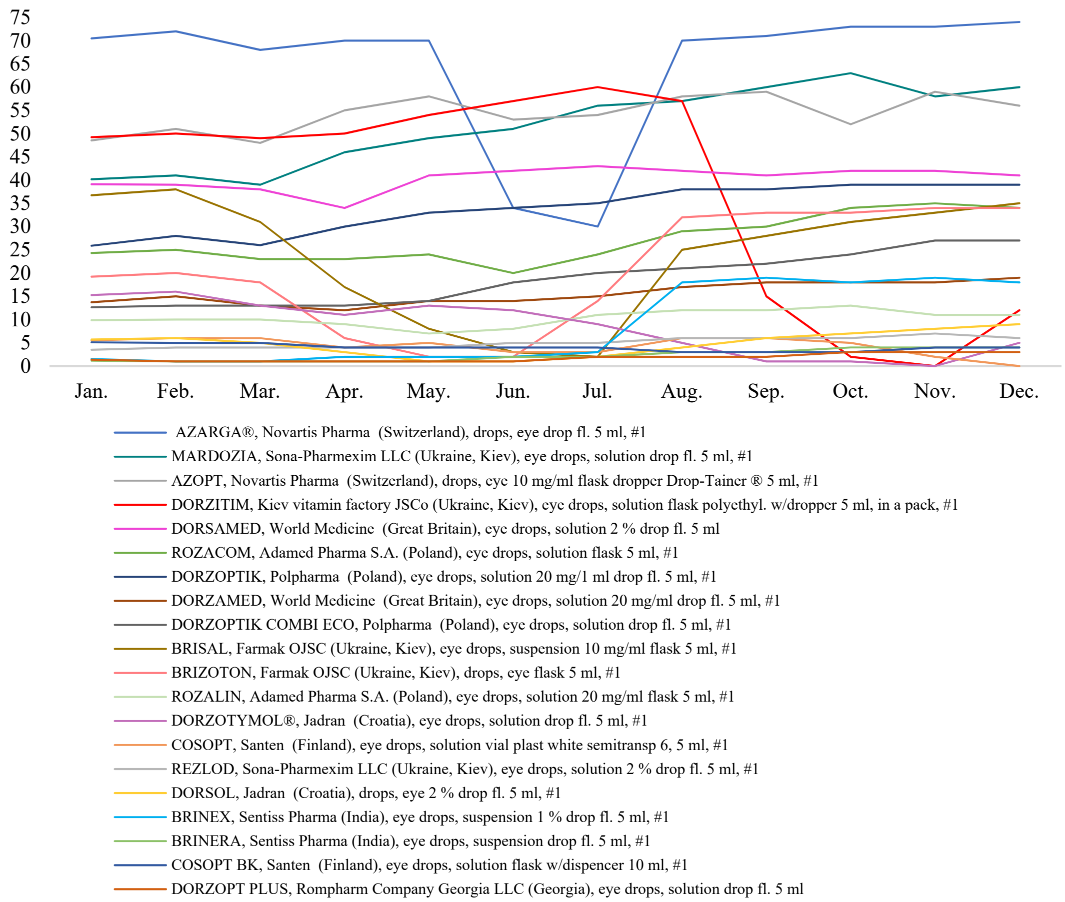


Figure 10. Dynamics of antiglaucoma drugs penetration in pharmacies in Ukraine (2022)

Source: (Proxima Research, 2023).

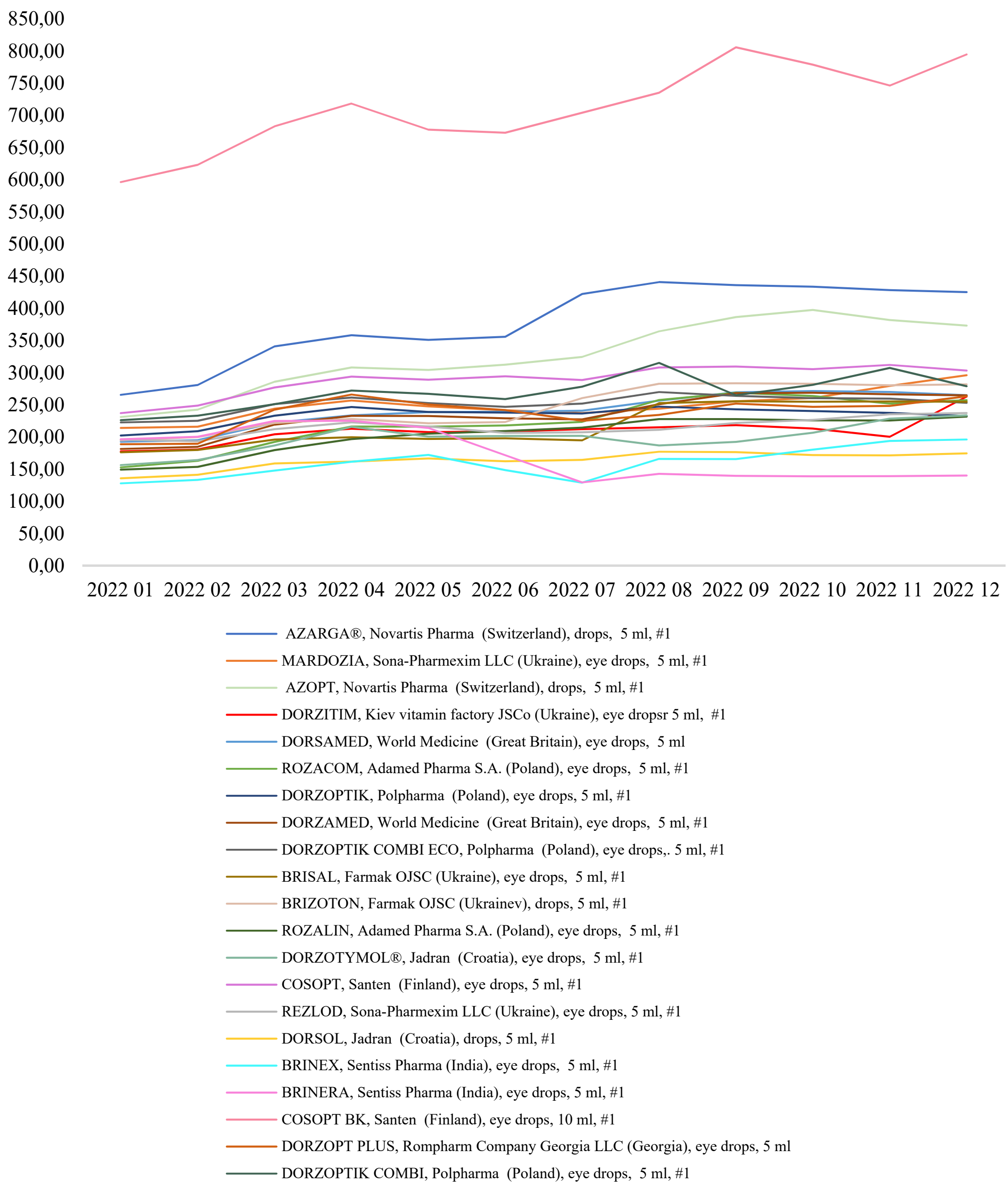


Figure 11. Dynamics of antiglaucoma drugs prices in hryvnias in Ukraine (2022)

Source: (Proxima Research, 2023).

Based on the analysis, it is advisable to draw the following conclusions:

- despite the negative impact of the war, some pharmaceutical manufacturers were able to use the opportunities that opened up to them. The winners were those companies that had sufficient stocks of drugs and thought out the logistics of their drugs to pharmacies in time, which were able to keep the market prices for vital drugs;
- the advantage was given to pharmaceutical companies that did not stop marketing activity in order to promote brands;

• constant monitoring of consumer needs determines the possibilities of rapid reorientation of production (for example, reorientation to the production of drugs for military needs);

• compliance with the principles of socially responsible marketing, the presence of a clear political position in the company, which is confirmed by real actions, is the basis of strengthening consumer loyalty to the brand;

• pharmaceutical companies with a diversified portfolio of drugs had greater opportunities (Rx and OTC drugs, different target audiences, different ATC categories of drugs and promotion in other pharmaceutical markets – Kazakhstan, Moldova, etc.);

• companies with a flexible marketing strategy won, which had the opportunity to respond to market indicators and adjust promotion tactics and strategy quickly.

Therefore, timely restoration and continuation of promotional activity of brands in the conditions of martial law is a great opportunity to gain a leadership position and strengthen the brand's consumer loyalty.

Conclusions

Thus, the pharmaceutical industry in wartime is a strategically important industry, because medicines are needed by both military at the front and by civilians, especially vital medicines and medicines for patients with chronic diseases. Obstacles to the sufficient functioning of pharmaceutical enterprises in the conditions of war are the loss of production capacity of warehouses with final goods, issues with logistics, damage to critical iinfrastructure, the need to stop production during the air raids and curfews, insufficient number of qualified personnel due to mobilization and migration abroad. All these reasons lead to an increase in the cost of production of medicines and to an increase in their prices.

As a result of the research, it was established that despite the negative impact of the war, the demand for medicines remains high. The effectiveness of pharmaceutical business enterprises is directly correlates with the chosen marketing strategy. Therefore, correction, adaptation and quick response to market needs are important for such enterprises in wartime. Aiming this, it is important for pharmaceutical companies to take a clear social position and adjust their promotional efforts according to changes in consumer priorities. At the same time, it is advisable to constantly plan and implement marketing activities for the promotion of brands. This also applies to drugs – almost every brand can be replaced by another generic drug. Timely restoration and continuation of promotional activity of brands in the conditions of war is, on the one hand, a marketing challenge, but, as the last year results have shown that it is also a great opportunity to gain a leadership position and strengthen the brand's consumer loyalty.

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