

Оригинальные исследования

- Научно-методические подходы к оценке и управлению имиджем высших учебных заведений фармацевтического (медицинского) профиля
Посылкина О.В., Лесная А.Г. 167
- Особенности организации сбора фармацевтических отходов, образующихся у населения, в Республике Беларусь
Яранцева Н.Д., Авсейко М.В. 187
- Характеристика затрат труда фармацевтических работников в процессе обслуживания посетителей аптек
Михайлова Н.И., Хуткина Г.А. 199
- Оценка острой токсичности сульфата 2-меркапто-5н-[1,3,4]-тиадиазоло-[2,3-б]-хиназолин-5-она
Сечко О.Г., Царенков В.М., Макаев Ф., Унку А., Валика В., Унку Л. 214
- Анализ украинского рынка противозачаточных медицинских изделий в контексте фармацевтической безопасности
Маганова Т.В., Каченко Н.А. 223
- Патогенетические параллели изменений костной и протеолитической систем при остеоартрозе в сочетании с экзокринной недостаточностью поджелудочной железы
Бабинец Л.С., Галабицкая И.М. 235
- Эффективность применения питьевых минеральных вод Сходницы для коррекции дисбиоза толстой кишки при коморбидности хронического панкреатита и сахарного диабета 2-го типа
Бабинец Л.С., Сасик Г.М. 241
- Кто хочет быть семейным врачом в Украине? Опрос мнения студентов старших курсов
Куодза Дж., Колесник А., Колесник П., Матюха Л. 248
- Влияние длительного приема метформина на ростовые характеристики узловых новообразований щитовидной железы у лиц с избыточной массой тела и ожирением
Луцик М.Л., Романовский А.А., Тузова А.А., Ярошевич Н.А. 258
- Влияние иммунореабилитации на иммунный статус детей с рецидивирующими инфекциями лор-органов
Зыблева С.В., Тихонова Е.С. 266
- Кардиоваскулярные риски и риски развития сахарного диабета 2-го типа среди разных категорий работников организации здравоохранения
Русаленко М.Г., Савастеева И.Г., Панкова С.В., Сукристый В.В. 278
- Система антиоксидантной защиты и цитокиновое звено иммунитета в течении и прогрессировании гастроэзофагеальной рефлюксной болезни у лиц молодого возраста с аутоиммунным воспалением
Пасиешвили Т.М., Железнякова Н.М., Пасиешвили Л.М. 289

Оценка эффективности и безопасности лечения пациентов с хроническим гепатитом С и циррозом печени и полиморфизмом UGT1A1*28 схемами с включением лекарственных средств прямого противовирусного действия и рибавирин	
<i>Лукашик С.П., Карпов И.А., Синявская М.В., Даниленко Н.Г., Анисько Л.А., Давыденко О.Г., Красько О.В.</i>	299
Обзоры и лекции	
Основные аспекты оказания фармацевтической помощи при реализации противогельминтных лекарственных средств	
<i>Кирилюк А.А.</i>	313
Роль витамина D при артериальной гипертензии высокого кардиоваскулярного риска	
<i>Гончар К.В., Якубова Л.В.</i>	337
Ожирение: современные возможности лечения у взрослых	
<i>Дыдышко Ю.В., Шепелькевич А.П.</i>	342
Сахарный диабет, дисгликемия и COVID-19: новое в коррекции и профилактике осложнений	
<i>Данилова Л.И., Луцки М.Л., Исачкина О.Н., Валуевич В.В.</i>	362
Радиойодтерапия болезни Грейвса: персонализированный подход к лечению	
<i>Валуевич В.В., Данилова Л.И.</i>	370
Заболевания щитовидной и паращитовидной желез в условиях пандемии COVID-19	
<i>Луцки М.Л., Романовский А.А., Данилова Л.И.</i>	377
Тактика ведения эндогенного гиперкортизолизма в условиях пандемии COVID-19	
<i>Радюк Д.В., Данилова Л.И., Журавлев В.А., Романовский А.А., Луцки М.Л.</i>	385
Лечение врожденного гиперинсулинизма у детей: реальность и перспективы	
<i>Солнцева А.В., Волкова Н.В.</i>	395
Острые осложнения сахарного диабета при COVID-19	
<i>Романовский А.А., Ярошевич Н.А., Луцки М.Л., Радюк Д.В., Бурко И.И., Данилова Л.И.</i>	406
Современные подходы к диагностике и лечению наиболее распространенных форм врожденной дисфункции коры надпочечников	
<i>Шепелькевич А.П., Лузан А.М., Градуша А.В.</i>	416
Обновленные европейские рекомендации по ведению пациентов с волчаночным нефритом	
<i>Чиж К.А., Тушина А.К.</i>	430
Практическая фармация	
Приготовление инъекционных растворов с добавлением кислот, щелочей и антиоксидантов	443
Глазные лекарственные средства	457

DOI: <https://doi.org/10.34883/PI.2020.2.2.030>
UDC 339.13:615.256.3]:346

Mahanova T.¹, Tkachenko N.²
Zaporizhzhia State Medical University, Zaporizhzhia, Ukraine

Маганова Т.В.¹, Ткаченко Н.А.²
Запорожский государственный медицинский университет, Запорожье, Украина

The Analysis of the Ukrainian Market of Contraceptive Medical Devices in the Context of Pharmaceutical Safety

Анализ украинского рынка противозачаточных медицинских изделий в контексте фармацевтической безопасности

Abstract

The drugs and medical devices (MD) supply system for all population groups requires high quality and reliable information in the process of developing and making strategic and tactical management solutions for its effective functioning.

The objective is to research contraceptive medical devices (CMD) market for the further formation of the informative base that will help to make rational solutions concerning supply women of childbearing age with contraceptive devices.

Materials and methods. Researching materials are data of the State Register of Medical Equipment and Medical Devices of Ukraine, informative-search system "Compendium Online", database "Legal and regulatory documents of the Ministry of Health of Ukraine", scientific publications in the field of research, online-resource of drugs searching in Ukraine "Tabletki.ua". Comparative, analytical and graphic analysis' methods, marketing research method were also used for the research.

Results. Complex marketing research in the Ukrainian pharmaceutical market of CMD was conducted. The legal and regulatory framework was studied. The main characteristics of the CMD assortment as completeness and breadth were determined. The company structure and market segmentation based on manufacturer countries were determined. The monopolization level index of the CMD market was calculated.

Conclusion. The problematic issues of legal and regulatory framework were studied, which interferes with the effective contraceptive supply system realization that was studied as a result of the comprehensive research of the CMD market. The existing registers, informative – searching resources were analyzed. We found out that the assortment of modern CMD is represented by male condoms – 80.75% and IUC (intrauterine contraceptives) – 19.25%. We determined that such devices as female condoms, a cervical cap, and a diaphragm are not available at the Ukrainian CMD market. This fact affects behavior of female consumers in the process of the contraceptive choosing.

The total and segmental monopolization level indexes of the market were calculated. They indicate progressive monopolistic tendencies on the market. The calculated index of the assortment completeness indicates a high level of female consumers' need satisfaction.

Keywords: contraceptive medical devices, marketing, pharmaceutical safety.

Резюме

Система обеспечения лекарствами и медицинскими изделиями любых групп населения требует качественной и достоверной информации в процессе разработки и принятия стратегических и тактических управленческих решений для эффективного ее функционирования.

Цель. Исследование рынка противозачаточных медицинских изделий (ПМИ) с последующим формированием массива для принятия рациональных решений по обеспечению контрацептивными средствами женщин детородного возраста.

Материалы и методы. Материалы исследования – данные Государственного реестра медицинской техники и средств медицинского назначения Украины, информационно-поисковой системы «Компендиум онлайн», базы «Нормативно-директивные документы МЗ Украины», публикации в научно-практических изданиях по направлению исследования, интернет-ресурс поиска лекарств в аптеках Украины «Tabletki.ua».

Использовали контент-анализ, сравнительный, аналитический, графический и методы маркетингового исследования.

Результаты. Проведено комплексное маркетинговое исследование фармацевтического рынка ПМИ Украины. Рассмотрены проблемы нормативно-правового регулирования. Установлены основные характеристики ассортимента ПМИ: полнота и широта. Определенная фирменная структура и сегментация рынка по странам-производителям. Рассчитан индекс уровня монополизации рынка.

Выводы. В результате комплексного исследования рынка ПМИ определены проблемные вопросы нормативно-правового регулирования, препятствующие эффективной работе системы обеспечения противозачаточными средствами (ПС). Проанализированы действующие реестры, информационно-поисковые ресурсы и сформирован ассортимент современных ПМИ, который представлен мужскими презервативами – 80,75% и ВК (внутриматочными контрацептивами) – 19,25%. Установлено, что на украинском рынке ПМИ отсутствуют такие средства контрацепции, как женский презерватив, шеечный (цервикальный) колпачок и диафрагма, что влияет на поведение потребителя – женщины в процессе выбора средства контрацепции. Рассчитан общий и сегментные индексы монополизации рынка. Они указывают на прогрессирующие монополистические тенденции. Определенный индекс полноты ассортимента указывает на высокий уровень удовлетворенности потребностей потребителей-женщин.

Ключевые слова: противозачаточные медицинские изделия, маркетинг, фармацевтическая безопасность.

■ INTRODUCTION

In modern conditions, the concept of national security (NS) is being expanded by including new areas of public life. Today, the existence of the NS is impossible without the support of the military, foreign policy, state, economic, informative, environmental, internet security, etc. [1]. It was proven that pharmaceutical safety (PS) is an integral part of the NS [2]. The improvement of the pharmaceutical safety is a current issue today taking into account the importance of the pharmaceutical industry for the whole country and such current problems as the reformation of the health care system and coronavirus control.

The definition of FS includes a range of the problematic components of the pharmacy that are related to pharmaceutical and economical "drugs safety" [3], legal and regulatory framework [4], innovative activity,

pharmacovigilance [5, 6], social responsibility [7], quality, assortment, and pricing policies [8] subjects of the pharmaceutical market and the final process drugs being – utilization [9].

Effective solution of the range of these issues is possible only with the observation of the fundamental principles of FS, and structuring of the pharmaceutical industry (by processes, phenomena, subjects, and objects of law) that can improve the functioning of drugs and MD supply system. Thus, different Ukrainian researchers as Trokhimchuk V.V. [10], Kotvitska A.A. [11], Nemchenko A.S. [12] had been studying issues related to high quality and timely drugs supply of different nosology.

During detailed analysis of the drugs and MD supply system in the context of the country's life-sustaining activity (increased demographic and labor potential), the female part of the population comes into the focus. We emphasize that, woman's health condition is highly influenced by the absence of big consequences of the irrational usage of contraception (abortion, sexual illness, "insolvency" of the social unit, etc. [13]) and with the level of contraception supply.

Over the last decade, the works of O.M. Zaliska [14], A. Giwa [15] and C. Picavet [16] were dedicated to particular aspects of this issue. Nevertheless, there are still some issues that weren't studied so much. For example, the formation arsenal of modern contraception means, including CMD, and the peculiarities of its providing, taking into account women's preferences.

■ PURPOSE

Research of the CMD market for the further formation of the informative base for making rational solution concerning contraceptives supply for women of childbearing age.

■ MATERIALS AND METHODS

The main researching materials are the data of the State Register of Medical Equipment and Medical Devices of Ukraine, informative-searching system "Compendium Online", the database of "The Legal and regulatory documents of the Ministry of Health of Ukraine", scientific publications in the field of research, online-resource for drugs searching in Ukraine "Tabletki.ua". Comparative, analytical and graphic methods of analysis, and marketing research method were used.

■ RESULTS

We conducted a structural analysis of the domestic CMD market at the beginning of our research. The modern CMD diversity includes IUC – spirals with silver, copper, gold; male and female condoms; cervical cap, and diaphragm. These devices are in II Class of safety according to the legislative regulation of CMD turnover [17]. They also approved by WHO [18]. All CMD must be checked for the conformity with the technical regulation [19] before being put into turnover and exploitation according to the Resolution of Cabinet of Ministers of Ukraine (CMU) No. 181 of 27.05.2014, (change came into force 01.07.2015; as amended by the CMU Resolution No. 240 on 23.03.2016), Other CMD, that had received the certificate of registration earlier before 01.07.2015 and had been included into the State Register

of Medical Equipment and Medical Devices (The register maintenance was canceled by the order of the Ministry of Health of Ukraine No. 384 on 06.05.2010) are allowed to continue their distribution on the market till the expiry date. However, they are allowed to be distributed on the market no more than 5 years after being put into turnover without another checking for conformity with the technical regulation. Such way, the deadline for the transition should be July 1, before this date all without exception CMD must pass a control for conformity with technical regulations. Today, "The Register of persons who are responsible for the turnover of medical devices, active implantable medical devices, and medical devices for "in vitro" diagnostics" is the only official register (by the order of the Ministry of Health of Ukraine No. 122 of 10 February 2017). The State Drugs and Narcotic Control Service enters information to this register on notification from persons who are responsible for the introduction of MD.

We systematized information about state registration certificates of MD before their expiration date (renewal date 02/02/2018) [19], information from The Register of responsible persons (renewal date 03/31/2020). [19], information from the informative-searching system "Compendium Online" from the "Morion" research enterprise for full analysis of the CMD market concerning the information mentioned above. We found out that actual information about CMD is missing in the "Register of persons who are responsible for the introduction of medical devices, active implantable medical devices and medical devices for "in vitro" diagnostics into turnover". It affects the quality of functioning of the CMD system. As of 15 March 2020, 25 trade names of CMD are in the Ukrainian turnover (21 names are 80.75% men's condoms and 5 names 19.75% intrauterine contraceptives (spirals)).

From this list, 12 CMD got state registration, 8 CMD got the declaration of conformity, and 6 CMD got the certificate of conformity (Table). It should be mentioned that different modifications that are under the same tradename have different forms of quality certification (certificate of conformity, declaration of conformity, state registration certificate) or don't have it at all, but are also in turnover. This fact shows that there is a lack of control and monitoring of the market situation.

We found out that such CMD as the female condom, cervical cap, and diaphragm are not registered in Ukraine based to the analysis of the existing registers. This fact shows that domestic manufacturers don't pay attention to this segment of CMD, limited number of female consumers was chosen and the existence of unfulfilled need in such devices in CMD.

During the study, the breadth of the CMD assortment was established: 202 modifications of condoms (different size, color, smell, additional elements), 21 modifications of IUC. These indicators says about a sufficiently high saturation and the possibility of choice of goods by consumers.

The company structure of the CMD market was also analyzed. We found out that foreign manufacturers of CMD with a market coverage of 84% (7 manufacturing country) occupy today the leading positions.

Thailand is the leading country in the CMD production. It takes 28% of the market. Medpack Ukraine LTD carries out production in the territory of Ukraine, but is a subsidiary of Medpack Swiss Group AG Switzerland. This company takes 16% of the total manufacturing and competes with affiliated CMD manufacturers as Spain and Germany. Ukrainian manufacturers are not

CMD Assortment

Tradename	Packaging (modification)	Manufacturers country	State registration certificate / Certificate of Conformity / Declaration of Conformity / date of entry into the Compendium
1	2	3	4
Condoms			
Hussars**	Hussar's ribber and dotten № 3	Costumer Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	Date of entry: 15.02.2020
Contex**	Contex classic № 3, 12 Contex dotted № 3, 12 Contex extra large № 3, 12 Contex forced № 12 Contex glowing № 12 Contex lights № 3, 12 Contex long love № 3, 12 Contex relief № 12 Contex ribbed № 3, 12 Contex romantic love № 3, 12 Contex tornado № 3	Costumer Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	Date of entry: 20.03.2020
Contex**	Contex color № 3 Contex forced № 3	Costumer Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	Date of entry: 01.04.2019
Dolphi**	Dolphi 3 in 1 № 3, 12 Dolphi XXXXXL № 3, 12 Dolphi anatomic № 3 Dolphi anatomical, color, flavored № 3, 12 Dolphi baggi № 3 Dolphi classic № 3, 12 Dolphi collection № 3, 12	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: LTD «Medpack Ukraine»	Date of entry: 13.08.2019
Dolphi**	Dolphi with super-dot structure № 3, 12 Dolphi extra thin № 3, 12 Dolphi ribs, special action № 3, 12 Dolphi anatomical super-thin № 3, 12 Dolphi with ribbed and dotted № 12	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: LTD «Medpack Ukraine»	№ UA.TR.067.2.7-15 from 11.09.2015 to 10.09.2020
Dom*	Dom Ultrathin № 3, 12 Dom 100% Pleasure № 3, 12 Dom Flavor № 3, 6, 12 Dom Stimulator № 3, 12 Dom Ribbed № 3, 12 Dom Contour № 3, 12	Costumer: Vitane PharmaGmbH (Germany) Manufacturer: Protective Devices Limited (India)	№ 14782/2015 of 12.06.2015
Durex**	Durex arouser № 3, 12 Durex select № 3 Durex ultra-strong № 12	Costumer: Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	Date of entry: 16.03.2020

Table continuation

Tradename	Packaging (modification)	Manufacturers country	State registration certificate / Certificate of Conformity / Declaration of Conformity / date of entry into the Compendium
1	2	3	4
Condoms			
Durex**	Durex extase № 3, 12	Costumer: Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	№ 098.0017-15 of 25.12.2015 to 24.12.2020
Durex**	Durex invisible № 3, 12	Costumer: Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	№ UA.TR.098.0007-15 from 03.10.2018 to 29.10.2020
Durex**	Durex intensive № 3, 12	Costumer: Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	№ UA.TR.098.0016-15 from 27.03.2017 to 24.12.2020
Erotica DELUXE**	Erotica DELUXE dotted № 3 Erotica DELUXE smooth № 3	Shanghai BioMed Industrial China	Date of entry: 18.03.2020 p.
Lahot**	Lahot Classic № 3 Lahot Sensory № 3 Lahot Ultra Thin № 3	Dalian Latex Co. Ltd China	Date of entry: 11.03.2020 p.
Lex**	Lex with speckled structure № 12 Lex ultra-thin № 12 Supe durable № 3, 12 Lex flavored № 12 Lex ribbed № 12	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: OOO a limited liability company under the laws of Ukraine «Medpack Ukraine»	№ UA.TR.067.2.7-15 from 11.09.2015 to 10.09.2020
Lex**	Lex ultra-thin № 3 Lex classic № 3 Lex ribbed № 3 Lex flavored № 3	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: OOO a limited liability company under the laws of Ukraine «Medpack Ukraine»	Date of entry: 10.12.2019
Lex**	Lex classic № 3, № 12, № 48	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: OOO a limited liability company under the laws of Ukraine «Medpack Ukraine»	№ 2 from 03.07.2017 to 10.09.2020
Mister Ben**	Mister Ben large № 3 Mister Ben with point structure № 3 Mister Ben thin № 3 Mister Ben classic № 3 Mister Ben ribbed № 3 Mister Ben Fruit Passion № 3	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: OOO a limited liability company under the laws of Ukraine «Medpack Ukraine»	№ UA.TR.067.2.7-15 from 11.09.2015 to 10.09.2020

Table continuation

Tradename	Packaging (modification)	Manufacturers country	State registration certificate / Certificate of Conformity / Declaration of Conformity / date of entry into the Compendium
1	2	3	4
Condoms			
On) *	On) Little tiger № 3 On) Natural feeling № 3 On) Super thin № 3 On) Fruit and color № 3 On) Stimulation № 3 On) Extra large № 3	R and S consumer goods GmbH Germany	№ 14783/2015 from 12.06.2015
One-touch**	One-touch Classic № 3, 12 One-touch Dotted № 3, 12 One-touch Enjoymaxx № 3, 12 One-touch lights № 3, 12 One-touch extra safe № 3, 12 One-touch ribbed № 3, 12 One-touch romantic № 3, 12	Costumer: FORANS Medical GmbH Germany Manufacturer: Thai Nippon Rubber Industry (Thailand)	№ 13 from 30.06.2017 to 30.06.2022
Play boy**	Play boy 3 in 1 № 3, 6 Play boy classic № 3, 6 Play boy ultra-thin № 3, 6	Thai Nippon Rubber Industry Public Company Limited Thailand	№ 05.03.02-03/14500 from 26.04.2016 to 25.04.2021
Play boy**	Play boy dotted № 3, 6 Play boy long play № 3, 6 Play boy ribbed № 3, 6	Thai Nippon Rubber Industry Public Company Limited Thailand	№ 602-123-20-3/10 from 21.09.2016 to 21.09.2021
Sexxy**	Sexxy extra thin № 3 Sexxy classic № 3 Sexxy colored № 3 Sexxy ribbed № 3	Costumer: Medpack Swiss Group AG Switzerland Manufacturer: OOO a limited liability company under the laws of Ukraine «Medpack Ukraine»	№ UA.TR.067.2.7-15 from 11.09.2015 to 10.09.2020
SICO*	SICO XXL with silicone oil № 3, 12	CRP Produktions und Vertriebs GmbH, Germany	№ 14831/2015 from 12.06.2015
SICO**	SICO Extra strong № 3 SICO Colour № 3, 12 SICO Pearl № 3, 12 SICO Ribbed № 3, 12 SICO Safety № 3 SICO Sensitive № 3, 12	CRP Produktions und Vertriebs GmbH, Germany	Date of entry: 20.03.2019
VITALIS*	VITALIS Natural № 3, 12 VITALIS Stimulation and warning № 3, 12 VITALIS Glow in the dark № 3, 12 VITALIS Comfort plus № 3, 12 VITALIS Strong № 3, 12 VITALIS X-large № 3, 12 VITALIS Delay and cooling № 3, 12 VITALIS Ribbed № 3, 12 VITALIS Sensation № 3, 12 VITALIS Color and flavor № 3, 12 VITALIS Super thin № 3, 12	R and S consumer goods GmbH, Germany	№ 14783/2015 of 12.06.2015

Table continuation

Tradename	Packaging (modification)	Manufacturers country	State registration certificate / Certificate of Conformity / Declaration of Conformity / date of entry into the Compendium
1	2	3	4
Condoms			
VIVA*	VIVA Classic № 3, 12 VIVA Ribbed № 3, 12 VIVA Coloured Flavored № 3, 12 VIVA Ultra Thin № 3, 12 VIVA Dotted № 3, 12	Karex Industries SDN. BHD, Malaysia	№ 14830/2015 of 12.06.2015
VIZIT ELITE*	VIZIT ELITE classic № 2 VIZIT ELITE ultra light № 2	Karex Industries SDN. BHD. Malaysia	№ 14830/2015 of 12.06.2015
VIZIT*	VIZIT Classic № 3, 12 VIZIT Ribbed with rings № 3, 12 VIZIT Aroma flavored colored № 3, 12 VIZIT Large extra № 3, 12 VIZIT Dotted № 3, 12	CRP Produktions und Vertriebs GmbH Germany	№ 14831/2015 of 12.06.2015
VIZIT HI-TECH*	VIZIT HI-TECH Comfort № 3, 12 VIZIT HI-TECH Pleasure with rings and dotted № 3, 12 VIZIT HI-TECH Sensitive № 3, 12 VIZIT HI-TECH Ultra light № 3, 12 VIZIT HI-TECH Erection with exciting lubrication № 3, 12 VIZIT HI-TECH 30 % longer with rings with anesthetic № 3, 12	CRP Produktions und Vertriebs GmbH Germany	№ 14831/2015 of 12.06.2015
Wadex**	Wadex classic № 3, 10 Wadex dotted № 3, 10 Wadex elite pleasure № 3, 10 Wadex flavored № 3 Wadex ribbed № 3	Costumer:FORANS Medical GmbH Germany Manufacturer: Thailand	№ 13 of 30.06.2017 to 30.06.2022
Wild Cat**	Wild Cat classic № 3	Costumer: Reckitt Benckiser Healthcare International Limited United Kingdom Manufacturer: Thailand	Date of entry: 18.03.2020
Intrauterine contraceptives			
Yunona**	Yunona Bio-T type 1 № 1 Yunona Bio-T type 2 № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	Date of entry: 12.11.2019
Yunona**	Yunona Bio-T Ag type 1 № 1 Yunona Bio-T Ag type 2 № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	Date of entry: 26.08.2019
Yunona**	Yunona Bio-T Ag+ type 1 № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	№ 002.11-2018 from 09.02.2018 to 08.06.2022

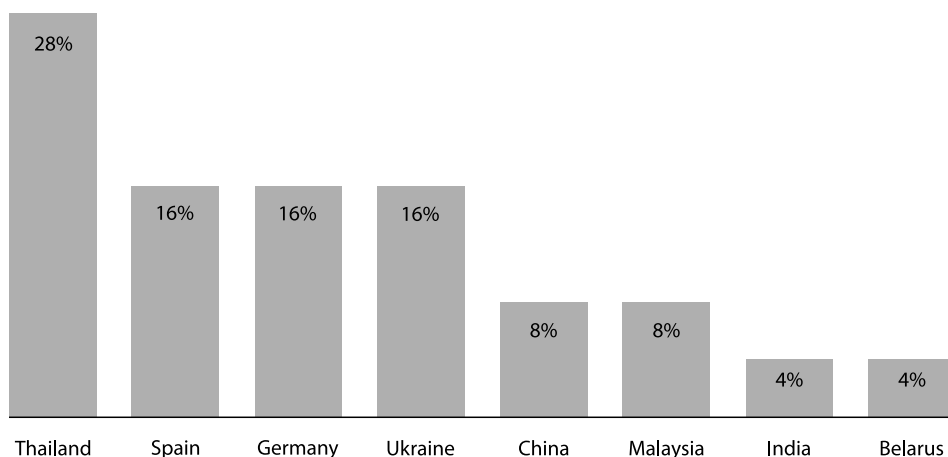
Table end

Tradename	Packaging (modification)	Manufacturers country	State registration certificate / Certificate of Conformity / Declaration of Conformity / date of entry into the Compendium
1	2	3	4
Intrauterine contraceptives			
Yunona**	Yunona Bio Multi № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	№ 002.11-2018 from 09.02.2018 to 08.06.2022
Yunona**	Yunona Bio Multi Ag № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	Date of entry: 16.04.2019
Yunona**	Yunona Bio-T № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	Date of entry: 03.06.2019
Yunona**	Yunona Bio-T Super № 1	ZAO a closely held company under the laws of Belarus "Medical enterprise Simurg" Belarus	Date of entry: 12.11.2019
Ancora*	Ancora 375 Ag Normal (Cu 375+Ag) № 1 Ancora 375 Cu Normal (Cu 375) № 1 Ancora 250 Cu Mini (Cu 250) № 1	Eurogine, S. L. Spain	№ 14852/2015 of 12.06.2015
Copper T*	Copper T 380 A Normal (Cu 380) № 1	Eurogine, S. L. Spain	№ 14852/2015 of 12.06.2015
Gold T*	Gold T Maxi (Cu 375+Au) № 1 Gold T Normal (Cu 375+Au) № 1 Gold T Mini (Cu 375+Au) № 1	Eurogine, S. L. Spain	№ 14852/2015 of 12.06.2015
Novaplus T*	Novaplus T 380 Ag Maxi (Cu 380+ Ag) № 1 Novaplus T 380 Ag Normal (Cu 380+ Ag) № 1 Novaplus T 380 Ag Mini (Cu 380+ Ag) № 1 Novaplus T 380 Cu Normal (Cu 380) № 1 Novaplus T 380 Cu Mini (Cu 380) № 1	Eurogine, S. L. Spain	№ 14852/2015 of 12.06.2015

Note: * The data from the State Register of Medical Equipment and Medical Devices of Ukraine; ** data from the informative-search system "Compendium Online".

interested in the manufacturing of similar products. This fact can affect the price affordability index for consumers (Figure).

The next stage of the study was calculating the indicator of the monopolization level – the Herfindahl-Hirschman Index (HHI) [20], that is



CMD segmentation of the market by manufacturers countries

calculated to full picture of the inter-manufacturer market distribution. The HHI coefficient was calculated by the formula:

$$HHI^* = S_1^2 + S_2^2 + \dots + S_n^2,$$

Where S_i – part of i-firm-manufacturer market,
 n – number of companies on the market.

*Note:

1. Highly concentrated markets $1800 < HHI < 10000$ (monopolistic market, high concentration level, it is difficult for the new company to come in such market).
2. Moderately concentrated markets $1000 < HHI < 1800$ (market with a strong level of monopolization, oligopolistic market).
3. Low market concentration: $HHI < 1000$ (low monopolization market, competitive market, new company can easy come in such market).

The HHI value of the Ukrainian CMD market is 1092, that can be determined as an oligopolistic market with a strong level of monopolization. The HHI for condoms and IUC was also calculated to determine possible directions the CMD market development. The HHI value of the Ukrainian condom market is 1293, that is also determined as an oligopolistic market with a strong level of monopolization and shows to Ukrainian manufacturers, on the possibility of extending the range of medical devices. The HHI of IUC is 6800, that can be determined as a monopolistic market. These results prove the lack of competition, that directly affects on consumer choice, and requires attention of the responsible authorities in the CMD turnover.

Besides, an assortment completeness ratio was calculated. It is 84%. This ratio indicates that the needs of turned CMD are almost completely satisfied.

■ CONCLUSIONS

Informative base of the modern arsenal of contraceptive devices, that is represented by male condoms – 80.75% and IUD – 19.25% was formed according to the CMD market analysis. Such contraceptives as: female condoms, cervical caps, and diaphragms are not available at the Ukrainian CMD market. This fact limit women's choices and influences the compliance factor. This statement shows directions for possible expanding the product range.

The analysis of the assortment breadth shows a pretty large range of male condoms. It is 202 modifications. The IUD range is about 21 modifications. It was found that there is no Ukrainian manufacturer in the territory of Ukraine, and 84% of CMD is exported.

The calculated index of the market monopolization level shows oligopolistic tendencies and to the monopoly of market relations in some areas (IUD), that requires attention of the executive authorities in the CMD turnover. The calculated index of the assortment completeness is 84%. It shows satisfaction of the needs of CMD turnover.

The directions for future research: the results of this direction research will help to identify the problematic issues of the functioning CMD domestic supply system and will help to improve and increase its level within the FS.

Conflict of interest: none.

Участие авторов: концепция и дизайн исследования, сбор данных, анализ и интерпретация данных, написание статьи – Т.В. Магано́ва; редактирование статьи, окончательное утверждение статьи – Н.А. Ткаченко.

■ REFERENCES

1. Pro natsionalnu bezpeku Ukrainy. Zakon Ukrainy vid 21.06.2018 № 2469-VIII zi zminyamy. Data onovlennya: 15.03.2020 [About national security of Ukraine. Law of Ukraine dated 21.06.2018 № 2469-VIII as amended. Updated: 03/15/2020]. Available at: <https://zakon.rada.gov.ua/laws/show/2469-19/fin?text=%E5%EA%EE%ED%EE%EC%B3%F7%ED%E0+%E1%E5%E7%EF%E5%EA%E0> (accessed 15 april 2020).
2. Datsko A.Y., Datsko O.I. (2014) Hlava 3. Kontseptualni zasady formuvannya systemy farmatsevychnoi bezpeky Ukrainy [Chapter 3. Conceptual principles of formation of the pharmaceutical safety system of Ukraine]. *Suchasni aspekty farmatsevychnoi praktyky v Ukraini, kolektyvna monohrafiya [Modern aspects of pharmaceutical practice in Ukraine, collective monograph]*, Lviv: Liga Press, pp. 74–85.
3. Datsko A.Y., Datsko O.I. (2014) Teoretyko-metodolohichni zasady formuvannya farmatsevychnoi bezpeky Ukrainy [Theoretical and methodological principles of formation of pharmaceutical safety of Ukraine]. *Sotsialna farmatsiia: stan, problemy ta perspektyvy: materialy Mizhnarodnoi naukovo-praktychnoi internet-konferentsii [Social pharmacy: status, problems and prospects: proceedings of the international scientific and practical Internet conf.] (Kharkiv, Ukraine, March 17-20, 2014)*, Kharkiv: NFAU, pp. 179–197.
4. Pashkov V.M. (2009) *Problemy pravovoho rehulivannya vidnosyn u sferi okhorony zdorovia (hospodarsko-pravovyi kontekst): monohrafiya [Problems of Legal Regulation of Relations in Healthcare (Economic and Legal Context): monograph]*. Kiev: MORION. (in Ukraine)
5. Viktorov O.P., Matvieieva O.V., Voitenko A.H., Lohvina I.O. (2007) Kontrol za bezpekoiu likarskykh zasobivx: 10 rokov farmakonahliadu Ukrainy [Medicines Safety Control: 10 years of pharmacovigilance of Ukraine]. *Ratsionalna farmakoterapiia (electronic journal)*, no 1 (2). Available at: <http://rpht.com.ua/ua-issue-article-16> (accessed 15 april 2020).
6. Zupanets I.A., Chernykh V.P., Moskalenko V.F., Popov S.B. (2004) *Farmatsevychna opika: atlas [Pharmaceutical care: Atlas]*. Kiev: Pharmacist Practitioner. (in Ukraine)
7. Tkachenko N.O. (2019) *Naukove proektuvannya systemy formuvannya sotsialno-vidpovidalnykh farmatsevychnykh fakhivtsiv na pidstavi mizhnarodnykh standartiv IC CSR-08260008000 TA ISO 26000:2010 [Scientific design of the system of formation of socially responsible pharmaceutical specialists on the basis of international standards IC CSR-08260008000 and ISO 26000: 2010] (PhD Thesis)*, Zaporozhzhia: ZSMU.
8. Kosyachenko K.L. (2012) *Metodolohiia vyznachennia sotsialnoi bezpeky farmatsevychnoho zabezpechennia naselennia ta yii otsinka po rehionakh Ukrainy [Methodology for determining social security of pharmaceutical security of the population and its assessment by regions of Ukraine]*. *Visnyk farmatsii*, no 1 (69), pp. 14–20.
9. Miehle F. (2011) Security Planning for the Pharmaceutical Industry. *Security infowatch.com*. Available at: <http://www.securityinfowatch.com/article/10517916/security-planning-for-the-pharmaceutical-industry> (accessed 15 april 2020).

10. Olkhova I.V., Trokhymchuk V.V. (2012) Doslidzhennia arsenalu likarskykh zasobiv dlia likuvannia khvorykh ditei na hastryt i duodenit [Investigation of an Arsenal of Medicines for the Treatment of Sick Children with Gastritis and Duodenitis]. *Farmatsevtichnyi chasopys*, no 4, pp. 114–119.
11. Kotvitska A.A., Prokopenko O.S. (2019) Monitoryng pokaznykiv fizychnoi ta sotsialno-ekonomichnoi dostupnosti likarskykh zasobiv, yaki zastosovuiutsia u likuvanni khvoroby Parkinsona [Monitoring of physical and socio-economic indicators of medicines used in the treatment of Parkinson's disease]. *Upravlinnia, ekonomika ta zabezpechennia yakosti v farmatsii*, no 3 (59), pp. 55–63.
12. Nemchenko A.S., Mishchenko V.L., Vynnyk O.V., Baranova A.V. (2020) Ohliad nadannia medychnoi dopomohy khvorym na dystyrykuliatornu entsefalopatii v Ukraini. [Overview of medical care for patients with dyscirculatory encephalopathy in Ukraine]. *Menedzhment ta marketyng u skladi suchasnoi ekonomiky, nauky, osvity, praktyky: materialy VIII mizhnar. nauk. - prakt. dystants. konf. [Management and marketing in the contemporary economy, science, education, practice: materials VIII international research and practice distance conf.]* (Kharkiv, Ukraine, March 19, 2020), Kharkiv: NFAU, pp. 103–104.
13. Maganova T.V., Tkachenko N.A. (2019) Sotsialnyie i pravovyye aspekty primeneniya protivozachatochnykh sredstv [Social and legal aspects of contraceptive use]. *Innovatsii v meditsine i farmatsii: mat. distantsionnoy nauch.-prakt. konf studentov i molodykh uchenykh [Innovations in Medicine and Pharmacy: Mat. remote scientific-practice. conf. of students and young scientists]* (Minsk, Belarus, 2019), Minsk: BGMU, pp. 782–785.
14. Stasiv K.Ya., Zaliska O.M., Maksymovych N.M. (2019) Analiz realnykh danykh pryznachen likarskykh zasobiv u protokolakh stymulatsii pry dopomizhnykh reproduktyvnykh tekhnolohiiakh v Ukraini [Analysis of the real data of prescribing drugs in stimulation protocols for assisted reproductive technologies in Ukraine]. *Farmatsevtichnyi chasopys*, no 3, pp. 83–91.
15. Giwa A. (2015) *Contraceptive Decision-making in North-Central Nigeria* (PhD Tesis), England: University of Sheffield.
16. Picavet C. (2016) *The Contraceptive Cycle* (PhD Tesis), Netherlands: Radboud University Nijmegen.
17. Pro zatverdzhennia Tekhnichnoho rehliamentu shchodo medychnykh vyrobiv. Postanova Kabinetu ministriv Ukrainy. Data onovlennia: 21.03.2020 [On approval of the Technical Regulation for medical devices. Resolution of the Cabinet of Ministers of Ukraine. Updated: 03/21/2020]. Available at: <https://zakon.rada.gov.ua/laws/show/753-2013-%D0%BF> (accessed 15 april 2020).
18. World Health Organization (2015) *Medical eligibility criteria for contraceptive use – 5th ed.* Geneva.
19. Derzhavna sluzhba Ukrainy z likarskykh zasobiv ta kontroliu za narkotyky [State Service of Ukraine for Drugs and Drug Control]. Available at: <http://dls.gov.ua/> (accessed 15 april 2020).
20. Rozanova N.M. (2014) *Mikroekonomika: uchebnoye posobiye* [Microeconomics: a textbook]. Moscow: Yuryt. (in Ukraine)

Received/Поступила: 29.04.2020

Contacts/Контакты: bataneofarm@gmail.com.