Pharmacotherapy of Depressive Disorders in Conditions of Coronavirus Disease: Pharmacoeconomic Experimental Study

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Summary. Purpose of the study was to conduct comprehensive pharmacoeconomic, clinical and pharmacological, marketing, documentary, normative and legal studies of pharmacotherapy of depressive disorders during global coronavirus pandemic. Pharmacoeconomic methods of analysis, in particular ABC/VEN analysis were used to select effective and safe drugs of pharmacotherapy of depression. According to the results of the ABC cost analysis, drugs for the pharmacotherapy of depression were distributed in descending order of their cost: group A (most expensive) includes drugs whose pharmacotherapy costs were equal to 81.76% of total costs; to group B (average cost) – 14.21%, and to group C (cheapest) – 4.03%. Group A included 10 INN drugs (including Citaloprame, Olanzapine, Fluvoxamine), the cost of one dose was 4956.5 UAH, which accounted for 81.76% of the total cost of pharmacotherapy for depression. Group B included four INNs (Sertraline, Escitaloprame, Mianserine, Sulpiride), the total cost of one dose of which was 861.3 UAH (14.21%). As part of group C – four INN (Doxepine, Lithium, Fluoxetine, Amitriptyline), the cost – 244.54 UAH per dose (4.03%). According to VEN analysis, it was experimentally proven that the highest costs of pharmacotherapy of depression were 77.7% for drugs of category V (vital) and 22.3% for drugs of category E (essential). During the VEN analysis it was found that fourteen INN drugs are included in category V (Vital). Category E includes four INNs. No INNs were included into category N (Non-Essential). The obtained results made it possible to make administrative and managerial decisions in determining the pharmacotherapy of patients with depressive disorders.

Keywords: coronavirus epidemic, depressive disorders, pharmacotherapy, drugs, pharmacoeconomics.

Introduction. The global impact of COVID-19 on mental health is growing. Mental health problems have increased in the wake of the COVID-19 coronavirus pandemic. COVID-19 is a pandemic with a rapidly growing number of infections and deaths. According to the WHO, since the beginning of the pandemic, the number of deaths from SARS-COV-2 in the world is more than 3 million people, more than 146 million people are infected. In the current context of the spread of the coronavirus pandemic, the role of pharmacotherapy of depressive disorders among patients with somatic diseases is growing. Despite numerous publications on COVID-19, currently conceptual thinking of the problem is only in its infancy. Pharmacotherapy of patients with depressive disorders during the COVID-19 pandemic is a topical issue. Further analysis of depression among patients with somatic disorders in terms of the prevalence of COVID-19 is important [1-7].

Depression is widespread among patients with coronavirus ailments, as well as among patients with somatic diseases, placed in quarantine. People are psychologically overwhelmed by illness and the possible loss of friends and loved ones. The prevalence of depression among dual-bed patients quarantined during the COVID 19 pandemic is higher than among the general population [8-10].

Depression is different from normal mood changes and short-term emotional reactions to problems in everyday life. Depression can be a serious health problem, especially if it lasts and is moderate to severe. It can lead to significant human suffering and poor functioning at work, at school and in the family. In the worst cases, it can lead to suicide. Every year, about 800,000 people die from suicide, the second leading cause of death among people aged 15-29 [11-13].

According to the Ministry of Health of Ukraine, from 2008 to 2012 the prevalence of depressive disorders increased from 65.37 to 73.6 people per 100 thousand population, and the incidence – from 8.74 to 9.06 per 100 thousand population. In recent decades, there has been a slight increase in the incidence of depressive disorders, which is not in line with global trends and indicates the inadequate and incomplete organization of detection, registration, and care for people with such

disorders. This is due to the lack of such a link in Ukraine as a family doctor in the diagnosis and treatment of depression associated with coronavirus infection and somatic diseases [14, 15].

The pharmacotherapy and epidemiology of depression are constantly being studied. In the pharmacotherapy of depression against the background of the coronavirus epidemic, the use of available drugs by the method of off-label clinical re-profiling (according to unconfirmed indicators) has become widespread [16, 17].

In the context of the coronavirus epidemic, given the prevalence of depression among patients with chronic somatic diseases, as well as the circulation in the pharmaceutical market of new, more effective, safer antidepressants, diagnosis, and treatment of mild and moderate depression in most European and North American countries. primary care (general practitioners – family doctors, therapists) and specialists (neurologists, cardiologists, gastroenterologists), not psychiatrists.

The purpose of the study was to conduct comprehensive pharmacoeconomic, clinical and pharmacological, marketing, documentary, regulatory and legal studies of pharmacotherapy of depressive disorders, as it is important to use modern, effective, and safe drugs for pharmacotherapy of depression.

Material and methods. For complex pharmaceutical and economical, clinical, and pharmacological, normative, and legal analysis authors used international and national medical and technological documents on standardization of medical care for depression, as well as scientific sources. The complex experimental research was based on the study of the following materials: the International Classification of Diseases of the 10th edition; the International Classification for Primary Care; international and national medical and technological documents on standardization of medical care for depression; normative documents (medical care standards, clinical protocols, drug forms, National List of Essential Medicines); drugs of clinical and pharmacological groups for pharmacotherapy of depression according to the ATC codes.

The information base of the study consisted of scientific works of foreign and domestic scientists on the topic of the article. The review of scientific sources of literature was carried out considering the recommendations of the Cochrane Society for PICO: P (population) – the population suffering from depression diseases; I (intervention) – pharmacotherapy, effective, safe, affordable drugs; C (comparator) – research technology; O (outcomes) – research results [18-22].

Drugs clinical and pharmacological groups for pharmacotherapy of depression diseases with diagnostic code of the ATC – Classification (ATC) ATC was selected. The objects of the study were drugs, which are registered in the State Register of drugs of Ukraine as of June 2021 [23, 24].

The names of drugs were systematized by International nonproprietary name (INN), trade names, the number of drugs, dosage forms. All drugs were registered in the State Register of drugs of Ukraine as of June 2021 [23-25].

The analysis based on production was performed with the determination of the share of domestic and foreign drugs, by individual countries, manufacturing companies. Drugs clinical and pharmacological groups for pharmacotherapy of депресії with diagnostic codes ATC – Classification (ATC) were selected [23]. International and national medical and technological documents on standardization of medical care of depression, as well as scientific sources were used for regulatory, documentary and pharmacoeconomic analysis. The objects of the study the codes of the International Classification of Diseases 10 edition (ICD-10) – F32, F33, F34.1 and the code of the International Classification for Primary Care (ICPC-2) – P76.

The current research was carried out using the system approach during 2018–2021. Study design is based on pharmacoeconomic, organizational and legal, forensic, and pharmaceutical approaches to pharmacotherapy using literature review. The anonymous analysis of medical cards of patients with depressive disorders was carried out (33 medical cards). Drugs for the pharmacotherapy of depression are systematized. The experimental study was conducted on the clinical bases of Kharkiv Medical Academy of Postgraduate Education, Lviv Medical Institute (hospitals, pharmacies), Department of Medical and Pharmaceutical Law, General and Clinical Pharmacy of Kharkiv Medical Academy of Postgraduate Education, and Luhansk State Medical University.

Marketing research of medicines that are allowed for medical use in Ukraine was conducted by trade names of medicines, manufacturers, dosage forms, registration certificates and terms of their registration in Ukraine by clinical-pharmacological, regulatory, and documentary methods of analysis.

Pharmacoeconomic experimental study based on ABC/VEN analysis was used to select effective and safe drugs. To assess the cost of pharmacotherapy for depression, ABC analysis was conducted as a tool to study the cost of purchasing drugs in healthcare facilities through tender or other procurement. ABC-analysis provides for the distribution of drugs from the most expensive to the least expensive depending on their share among the indicators of the total cost of pharmacotherapy of depression. The procedure included a step-by-step algorithm: systematization of drugs by INN for ABC analysis; calculation of the share of the total cost of the drug in descending order of value in UAN, starting from the top of the population with a higher value (category A – the most expensive; category B – less expensive, average cost; category C – the cheapest). Price indicators were calculated on average as of June 2021. Next, the total percentage of value was calculated, as well as determine the cut-off points for drugs in categories A, B, C based on the Pareto principle. A structured data collection from Management Science for Health was used to collect the necessary data for ABC analysis. ABC analysis involves the distribution of drugs from the most to the least expensive depending on their share among the indicators of the general purpose of drugs [20].

To assess the effectiveness of drug use, a vital-essential-nonessential (VEN) analysis was performed to classify drugs into categories V (Vital), E (Essential) and N (Non-Essential), considering regulatory documents (medical care standards, clinical protocols, State Form of Medicines, National List of Essential Medicines) and the principles of evidence-based medicine та evidence-based фармації (quality, safety, economy, accessibility). According to ABC/VEN analysis, a matrix of consolidated ABC/VEN for pharmacotherapy of depression was constructed.

Modern research methods were used: pharmacoeconomic, clinical and pharmacological, ABC/VEN, normative and legal, documentary, bibliographic, systemic, comparative, marketing, graphic, mathematical analysis. Mathematical processing and statistical evaluation of data was performed using Microsoft Excel.

The research of the article is a fragment of research works of Luhansk State Medical University “Conceptual interdisciplinary approaches to pharmaceutical provision and availability of drugs, taking into account organizational and legal, technological, analytical, pharmacognostic, forensic and pharmaceutical, clinical and pharmacological, pharmacoeconomic, marketing, social and economic competencies” (state registration number 0123U101632, terms 2023-2027); Kharkiv Medical Academy of Postgraduate Education on “Improving the organizational and legal procedure for providing patients with drugs from the standpoint of forensic pharmacy, organization and management of pharmacy” (state registration number 0116U003137, terms 2016-2020) and “Pharmaceutical and medical law: integrated approaches to the system of drug circulation from the standpoint of forensic pharmacy and organization of pharmaceutical business” (state registration number 0121U000031, terms 2021-2026); Petro Mohyla Black Sea National University on the topic “Conceptual interdisciplinary approaches to the drug circulation system, taking into account organizational and legal, technological, biopharmaceutical, analytical, pharmacognostic, forensic and pharmaceutical, clinical and pharmacological, pharmacoeconomic, pharmacotherapeutic aspects” (state registration number 0123U100468, implementation period 2023-2028).

Results and discussion. Depression is on the rise globally. In May 2013, the World Health Assembly adopted a resolution calling for a comprehensive, coordinated national response to mental disorders. In low- and middle-income countries, 76% to 85% of depressed patients do not receive the required pharmacotherapy. Barriers to obtaining effective pharmacotherapy include a lack of resources, a shortage of drugs, and social stigma. Another obstacle is inaccurate diagnosis in the context of the spread of coronavirus disease. Depression, in turn, can exacerbate stress, disrupt normal functioning, worsen the life situation of the person suffering from it, and lead to even more severe depression. There is a relationship between depression and physical health. For example, cardiovascular diseases can lead to the development of depression and vice versa [26, 27].

Depression problems have increased in the context of the global pandemic due to many factors (social distancing, fear of infection and death, fear of losing a job, family, and friends due to illness, loss of finances). Symptoms of depression and anxiety are exacerbated by fear, insecurity, and social isolation under quarantine Pharmacotherapy for depression is individually tailored to co-morbid conditions, interactions and patient needs Telemedicine solutions are used in inpatient and outpatient settings to provide mental health services A systematic review of the impact of the COVID-19 pandemic has shown the prevalence of depression symptoms in the general population from 14,6% to 48.3%. Regarding depression and other mental health conditions in the general population, there is also a serious concern for those hospitalized with COVID-19. Hospitalized patients face the previously mentioned risk factors for depression with COVID-19. They also isolated from visitors when fighting disease in a stationary setting. A hospital in Wuhan, China, the city, and country where the virus was suspected of origin, reported depressive symptoms in 13.4% of hospitalized COVID-19 patients. Infectious epidemics are associated with anxiety, panic, and stress. It is believed that patients with COVID-19 may suffer from anxiety, impaired mood regulation and exacerbation of pre-existing mental illness [26, 28, 29].

Among patients who have undergone coronavirus disease, direct and indirect negative effects of COVID-19 on the nervous system are found. Among the mediated subjectively significant stress factors of the pandemic, a long-term potential threat to life, long-term quarantine measures with self-isolation, lack of stable immunity, limited access to medical services, etc. are of particular importance. up to 50.9%) and mixed anxiety-depressive disorders. When conducting psychopharmacotherapy in patients with COVID-19, preference should be given to drugs not only with minimally expressed undesirable effects and adverse drug interactions, but also with additional therapeutic procognitive and somatotropic particularities [30, 31].

The COVID-19 pandemic has negatively impacted the psychological well-being of people around the world, especially in low- and middle-income countries such as Bangladesh. Conducted an online cross-sectional study among Bangladeshi citizens. A total of 13,654 participants (61.0% male; mean age 24.0 years; age range 18–65) completed the survey between May and June (2020). The survey included socio-demographic data and questions related to COVID-19, as well as lifestyle, suicidal and psychometric indicators. Hierarchical regression was performed to determine a significant association between depression and the studied variables. The score for depressive symptoms during the COVID-19 pandemic was 43.5%. According to hierarchical regression analysis, depression was significantly associated with withdrawal from COVID-19 prevention measures, daily activities in home quarantine (such as playing video games), and suicidal behavior. The score for suicidal thoughts during the pandemic was 8.2%, slightly higher than the 5% prevalence of suicidal thoughts found in a pre-COVID-19 study conducted in Bangladesh, and 4.3% in Turkey earlier for the COVID-19 pandemic. A broader study in seventeen countries found that suicidal ideation was prevalent at 9.2%. While none of these recent studies were conducted during the COVID-19 pandemic, the results of this study demonstrate that the pandemic may be affecting suicidal ideation. A study from Bangladesh found that 12.8% of suicidal thoughts are present among university students during the COVID-19 pandemic. During the pandemic, the percentage of people with suicidal ideation and past suicidal thoughts was much higher among people with depression than among people without depression, and home quarantine and feelings of social isolation can be a co-problem among people and a possible vulnerability to suicide [28].

In Ukraine, medical care for patients with depression in the context of the spread of coronavirus disease is provided in accordance with the provisions of the Unified Clinical Protocol of primary, secondary (specialized) and tertiary (highly specialized) medical care "Depression (mild, moderate, severe depressive episodes without somatic syndrome or somatic syndrome recurrent depressive disorder) "[32].

According to the results of normative-legal and documentary analysis of international and national Ukrainian clinical protocols, it was found that four drugs (Amitriptyline, Lithium, Risperidone, Fluoxetine) were included in all normative and legal documents, which testifies to their recognition and use both internationally, and at the Ukrainian level [23, 25, 32-37].

In international and Ukrainian practice, fourteen more drugs are used in the pharmacotherapy of depression (Agomelatine, Venlafaxine, Doxepine, Duloxetine, Escitaloprame, Mianserine, Mirtazapine, Olanzapine, Paroxetine, Sertraline, Sulpiride, Trazodone, Fluvolopramine, Ukraine).

The above indicates the existence of certain contradictions and inconsistencies between domestic and international regulations regarding the pharmacotherapy of depression.

Pharmacotherapy of depression includes drugs of different clinical and pharmacological groups. Clinical and pharmacological group's drugs for pharmacotherapy of depression by International nonproprietary name (INN) are given in Table 1.

Table 1. Clinical and pharmacological group's drugs for pharmacotherapy of depression.

No.	INN	Clinical and pharmacological group (ATC code)
1.	Agomelatine	N06AX22
2.	Amitriptyline	N06AA09
3.	Venlafaxine	N06AX16
4.	Doxepine	N06AA12
5.	Duloxetine	N06AX21
6.	Escitaloprame	N06AB10
7.	Lithium	N05A N01
8.	Mianserine	N06AX03
9.	Mirtazapine	N06AX11
10.	Olanzapine	N05AH03
11.	Paroxetine	N06AB05
12.	Risperidone	N05AX08
13.	Sertraline	N06AB06
14.	Sulpiride	N05AL01
15.	Trazodone	N06AX05
16.	Fluvoxamine	N06AB08
17.	Fluoxetine	N06AB03
18.	Citaloprame	N06AB04

According to clinical and pharmacological characteristics, drugs are divided into two groups according to the ATC code: N05 "Antipsychotics" – four drugs (Lithium, Olanzapine, Risperidone, Sulpiride) and N06 "Antidepressants" – other fourteen drugs.

Marketing research of drugs for the pharmacotherapy of depression (Table 2) was carried out.

Table 2. Marketing analysis of International nonproprietary name of drugs for pharmacotherapy of depression.

No.	INN	Trade name / Manufacturer	Dosage form, strength	Registration certificate, term
1	2	3	4	5
1.	Agomelatine	Melitor /Serv 's Laboratories Industry, France	Tablets of 25 mg	UA/4972/01/01 Unlimited from 19.07.2016
2.	Amitriptyline	Amitriptylin hydrochloride / Kharkiv Pharmaceutical Enterprise "People's Health", Limited Liability Company, Ukraine	Tablets of 25 mg	UA/5160/01/01 Unlimited from 16.06.2021
3.	Venlafaxine	Venlafaxine-3H /	Tablets of 75 mg	UA/13809/01/02Unlimited from 08.05.2019

		Limited Liability Company "Kharkiv Pharmaceutical Enterprise" People's Health ", Ukraine		
4.	Doxepine	Doxepin / Teva Operations Ltd. Poland, Poland	Capsules of 10 mg	UA/7467/01/01 Unlimited from 24.01.2018
5.	Duloxetine	Delupoxa / Hetero Labs Limited, India	Capsules of 60 mg	UA/17001/01/02 Limited from 31.10.2018 until 31.10.2023
6.	Escitaloprame	Depresan / Limited Liability Company "Kharkiv Pharmaceutical Enterprise" People's Health", Ukraine	Tablets of 20 mg	UA/13811/01/03 Unlimited from 05.07.2019
7.	Lithium	Glutalite / Public Joint-Stock Company "Research and Production Center" Borshchahiv Chemical-Pharmaceutical Plant ", Ukraine	Capsules of 300 mg	UA/9081/01/01 Unlimited from 12.09.2018
8.	Mianserine	Miaser / Rivopharm SA, Switzerland	Tablets of 10 mg	UA/14722/01/01 Unlimited from 22.12.2020
9.	Mirtazapine	Mirtazapine Sandoz / Salutas Pharma GmbH, Germany	Tablets of 15 mg	UA/4430/01/01 Unlimited from 22.12.2020
10.	Olanzapine	Egolanza / CJSC EGIS Pharmaceutical Plant, Hungary	Tablets of 5 mg	UA/11344/01/01 Unlimited from 24.02.2021
11.	Paroxetine	Paroxetine/Medokemi LTD, Cyprus	Tablets of 20 mg	UA/1498/01/01 Unlimited from 12.08.2019
12.	Risperidone	Rispaxol/JSC "Grindeks", Latvia	Tablets of 4 mg	UA/5817/01/03 Unlimited from 22.12.2016
13.	Sertraline	Emoton / Atlantic Pharma - Produsoes Pharmaseutikas, Portugal	Tablets of 50 mg	UA/15643/01/01 Unlimited from 02.07.2021
14.	Sulpiride	Sulpiride / Teva Operations Poland, Poland	Capsules of 100 mg	UA/4832/01/02 Unlimited from 21.04.2021
15.	Trazodone	Trittico / Aziende Kimike Riunite Angelini Francesco, Italy	Tablets of 150 mg	UA/9939/01/02 Unlimited from 29.05.2019
16.	Fluvoxamine	Deprivox / STADA Arnzeimittel AG, Germany	Tablets of 50 mg	UA/3091/01/01 Unlimited from 02.07.2021
17.	Fluoxetine	Fluoxetine / Limited Liability Company "Research Plant" GNCLS, Ukraine	Tablets of 20 mg	UA/8591/01/01 Unlimited from 11.05.2018

18.	Citalopram	Tsipramil / H. Lundbeck A/C, Denmark	Tablets of 20 mg	UA/2210/01/02 Unlimited from 18.03.2020

According to the results of marketing analysis, it was found that: the largest share of producers belongs to domestic production (30.3%); ranking of manufacturers from other countries – Denmark, India, Ireland, Italy, Cyprus, Latvia, Portugal, Hungary, Switzerland (5.5% each); Germany, Poland (10.1% each). For the pharmacotherapy of depression, doctors prescribe 77.7% tablets and 22.3% capsules. 94.5% of drugs have an unlimited period of validity on the territory of Ukraine.

The next stage of research was to conduct pharmacoeconomic studies using ABC/VEN analysis, which involves the distribution of drugs by the cost of pharmacotherapy and evaluation of the effectiveness of drug use in a healthcare setting. ABC analysis was applied as a method for classifying drugs based on cost incurred (Table 3).

Table 3. ABC analysis of International nonproprietary name of drugs for pharmacotherapy of depression.

No.	INN	Cost per unit dose (UAH)	Specific weight (%)	ABC group
1.	Citalopram	820,60	13,54	A
2.	Risperidone	748,60	12,35	A
3.	Duloxetine	489,40	8,07	A
4.	Paroxetine	453,60	7,48	A
5.	Mirtazapine	450,20	7,43	A
6.	Trazodone	446,60	7,37	A
7.	Olanzapine	422,20	6,96	A
8.	Venlafaxine	404,20	6,67	A
9.	Agomelatine	368,40	6,08	A
10.	Fluvoxamine	352,70	5,82	A
	Total for group A	**4956,50**	**81,76**	
11.	Sertraline	253,80	4,19	B
12.	Escitalopram	226,40	3,73	B
13.	Mianserine	225,00	3,71	B
14.	Sulpiride	156,10	2,57	B
	Total for group B	**861,30**	**14,21**	
	Total for groups AB	**5817,80**	**95,97**	
15.	Doxepine	129,50	2,14	C
16.	Lithium	57,50	0,95	C
17.	Fluoxetine	40,90	0,67	C
18.	Amitriptyline	16,64	0,27	C
	Total for group C	**244,54**	**4,03**	
	Total for groups ABC	**6062,34**	**100,00**	

According to the results of ABC analysis, group A included drugs, the use of which was equal to 81.76% of the total rate of use; to group B – 14.21%, and to group C – 4.03%.

Category A included ten INN drugs (Citalopram, Risperidone, Duloxetine, Paroxetine, Mirtazapine, Trazodone, Olanzapin, Venlafaxine, Agomelatine, Fluvoxamine), the cost of which is 4956.50 UAH i.e., 81.76% of the total cost of treatment of the patient. Group B included four INN drugs (Sertralin, Escitalopram, Mianserin, Sulpiride) whose total cost is 861.30 UAH (14.21%). The group C includes four INN drugs (Doxepin, Lithium, Fluoxetine, Amitriptyline) with a cost of UAH 244.54 (4.03%). VEN analysis was applied as a method of prioritizing pharmaceuticals based on public health importance as vital, essential, and non-essential (Table 4).

Table 4. Vital-essential-nonessential analysis of International nonproprietary name of drugs for pharmacotherapy of depression.

No.	Trade name	VEN group
1.	Risperidone	V
2.	Lithium	V
3.	Fluoxetine	V
4.	Amitriptyline	V
5.	Citaloprame	E
6.	Duloxetine	E
7.	Paroxetine	E
8.	Mirtazapine	E
9.	Trazodone	E
10.	Olanzapine	E
11.	Venlafaxine	E
12.	Agomelatine	E
13.	Fluvoxamine	E
14.	Sertraline	E
15.	Escitaloprame	E
16.	Mianserine	E
17.	Sulpiride	E
18.	Doxepine	E

According to the results of VEN analysis, found that four INN drugs (Risperidone, Lithium, Fluoxetine, Amitriptyline) belong to category V (Vital). Category E (Essential) includes fourteen INN drugs (Citalopram, Duloxetine, Paroxetine, Mirtazapine, Trazodone, Olanzapine, Venlafaxine F, Sertraline, Escitalopram, Mianserin, Sulpiride, Doxepin). Category N (Non-essential) did not include any drug.

Distribution according to the results of VEN-analysis of studied drugs for pharmacotherapy of depression shown on Fig. 1.

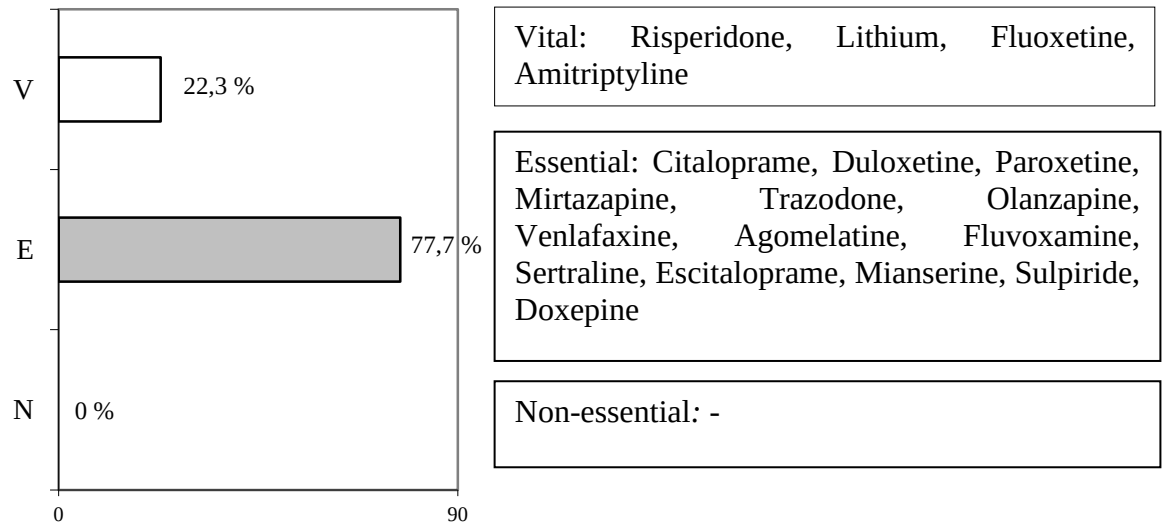

Fig. 1. Distribution according to the results of VEN analysis of studied drugs for pharmacotherapy of depression.

The studied drugs in 22.3% (Risperidone, Lithium, Fluoxetine, Amitriptyline) included in pharmacotherapy as vital (category V), in 77.7% (Citalopram, Duloxetine, Paroxetine, Mirtazapine,

Trazodone, Olanzapine, Venlafaxine F, Sertralin, Escitalopram, Mianserin, Sulpiride, Doxepin) as essential (category E).

Based on the ABC/VEN analysis, a matrix of the consolidated ABC/VEN analysis was formed (Table 5).

Table 5. Matrix of consolidated ABC-VEN analysis of drugs for pharmacotherapy of depression.

Drugs group	Quantity of drugs	V		Quantity of drugs	E		Quantity of drugs	N	
		Drug prescription			Drug prescription			Drug prescription	
		UAH	%		UAH	%		UAH	%
A	1	748,60	12,35	9	4207,90	69,40	-	-	-
B	-	-	-	4	861,30	14,21	-	-	-
C	3	115,04	1,90	1	129,50	2,14	-	-	-
Total	4	863,64	14,25	14	5198,7	85,75	-	-	-

According to the results of pharmacoeconomic analysis, the following indicators were established (Table 5). The group of essential drugs (group E) took the largest share of costs (85.75%). In group E, 69.4% of the most expensive drugs (for example, Citaloprame) are prescribed by doctors; 14.21% – drugs at the average price (for example, Sertraline); 2.14% are the cheapest drugs (for example, Doxepine).

According to doctors, the niche of the matrix of vital drugs (group V) had a share of 14.25% in the pharmacotherapy of depression. In group V, the largest costs (12.35%) were drugs of group A (e.g., Risperidone). Only 1.9% (e.g., Fluoxetine) is the cheapest drug (group C).

Thus, comprehensive pharmacoeconomic, clinical-pharmacological, marketing, documentary and regulatory studies have made it possible to study the cost component of pharmacotherapy of depression, to systematize the risks of purchasing drugs using budgetary and non-budgetary funds and to predict the effectiveness of drugs in healthcare facilities based on the principles of evidence-based medicine and pharmacy.

Conclusions. Complex pharmacoeconomic, clinical and pharmacological, marketing, documentary, and normative and legal researches of pharmacotherapy of depression in the conditions of spread of coronavirus disease were carried out. The obtained results make it possible to make administrative and managerial decisions in determining the pharmacotherapy of patients with depressive disorders. The introduction of information on pharmacoeconomic components for the pharmacotherapy of depression will ensure proper organization of the circulation of medicines at the stages of appointment, purchase, storage, accounting, quality control, transportation, release, destruction, licensing in accordance with current medical and pharmaceutical legislation in healthcare facilities. Ultimately, further research is needed on the long-term effects of the COVID-19 pandemic on mental health.

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