

# Justification of Methodological Approaches to Optimizing the Assortment Portfolio of Pharmacy Organizations Using the Example of Antihistamines

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## ABSTRACT

**Background.** The efficiency of the economic activity of a pharmacy organization depends on the optimal assortment and pricing policy, which allows obtaining the maximum total marginal income and meeting the needs of patients. To develop tools for increasing the profitability of pharmaceutical activities by improving the assortment portfolio of pharmacy organizations, a group of antihistamines was selected that are widely represented on the Russian pharmaceutical market and are in demand by end consumers.

**Objective.** Development of methodological approaches to optimizing the assortment portfolio of pharmacy organizations using the example of antihistamines drugs, by determining their rating in terms of profit from sales, analyzing the range of cost indicators and the level of state regulation of prices that ensure the profitability of pharmaceutical activities and the economic availability of this group of drugs for the population.

**Methods.** To achieve this goal, the methods of marketing analysis (ABC analysis), content analysis and documentary observation were used.

**Findings.** Analyzed data on the sale of antihistamines for 2019 in 22 pharmacy organizations in three cities of the Caucasian Mineral Waters region of the Stavropol Territory. The analyzed assortment included 66 trade names of antihistamines in various dosages and dosage forms. The cost analysis of the assortment of investigated range of antihistamines, carried out using the method of documentary observation, made it possible to distribute them into three price ranges and establish the drugs - the best sellers. ABC analysis of sales volumes and profits received from it made it possible to single out 17 trade names (25.7% of the studied assortment) of antihistamines, which form about 80% of the amount of profit from their sale. Content analysis of the "List of Vital and Essential Medicines for 2020" helped to obtain data on the level of state regulation of prices in the Russian pharmaceutical market for the group of antihistamines. Of the 66 trade names of the investigated drugs, state regulation of prices applies to 28 names (42.4% of the total number of names).

**Conclusions.** The studies have shown that, as methodological approaches to optimizing the assortment portfolio of pharmacy organizations, using the example of antihistamines, the following can be used: analysis of sales volumes and identification of the rating of the most popular drugs that form about 80% of profits (ABC analysis), as well as cost analysis and analysis of the level of state regulation of prices for drugs on the regional pharmaceutical market.

**Keywords:** Antihistamines, sales volumes, cost indicators, ABC analysis, government price regulation

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## INTRODUCTION

Among the most common diseases of a socially significant nature, one of the leading places is occupied by allergic diseases [1]. For their drug therapy, antihistamines medicinal products are widely used. In the domestic pharmaceutical market, the range of antihistamine drugs includes 18 international non-proprietary names (INN). They are represented by 84 trade names (TN), which, taking into account the forms of release and dosages, make up 161 assortment positions. With such a wide choice, medical professionals do not always correctly prescribe the necessary drugs, thereby causing unreasonable polypharmacy, which contributes to the deterioration of the patient's health [2]. Allergic pathologies prevent patients from leading an active social life, as well as

negatively affect performance and life in general, disrupting sleep and calmness with constant ailments of a chronic or seasonal nature [3, 4].

In such conditions, the efficiency of the economic activity of a pharmacy organization depends on the optimal assortment and pricing policy, which makes it possible to obtain the maximum total marginal income and satisfy the needs of patients [5].

In connection with the above, the goal of the work was to develop methodological approaches to optimize the assortment portfolio, using the example of antihistamine drugs, by determining their rating in terms of profit from sales, analyzing the range of cost indicators and the level of state regulation of prices that ensure the profitability of pharmaceutical activities and economic availability of

antihistamines for the population.

#### LITERATURE

The conducted content analysis of scientific publications made it possible to establish that the features of the pharmaceutical market for antihistamine drugs were studied using the example of individual regions of Russia in 2007-2013 [6, 7]. Over the past period of time, the range of antihistamine drugs has been significantly updated and expanded. At the same time, new methodological approaches to the formation of the assortment portfolio of pharmacy organizations were not developed. In addition, each region of Russia has its own distinctive features in terms of the spread of diseases, the effective demand of the population and the quality of pharmaceutical consulting. On the regional pharmaceutical market of resort cities of the Caucasian Mineral Waters (CMW) of the Stavropol Territory, no studies were conducted on improving the management of assortment policy at the level of pharmacy organizations, using the example of antihistamine drugs, which determines the scientific relevance and practical significance of the presented work.

#### METHODS

To implement the set scientific task, methods of marketing analysis (ABC-analysis), documentary observation, content analysis of regulatory legal documents were used.

#### RESULTS AND DISCUSSION

In the course of the work, we analyzed the data on the sale of antihistamine drugs for 2019 in the largest pharmacy network in the cities of the CMW region, which includes more than 100 pharmacy organization. The experimental base was 22 pharmacy organization located in the cities of Pyatigorsk, Essentuki and Kislovodsk. The analyzed list included 66 TH antihistamine drugs in various dosages and dosage forms in circulation in the regional pharmaceutical market.

At the first stage of the study, using the method of documentary observation of the availability and movement of material and monetary funds in the accounting registers, we determined the sales volumes of antihistamine drugs in the 22 pharmacy organizations under study for 2019 by months and quarters (Table 1).

**Table 1.** Sales volumes of antihistamines in 2019

Month	Sales volume per month, rub.	Share of the total annual sales, %	Sales volume for the quarter, rub.	Share of the total annual sales, %
January	827228,59	7,8	2357875,38	22,33
February	721475,12	6,8		
March	809171,67	7,7		
April	910097,56	8,6	2994956,98	28,36
May	1042776,36	9,9		
June	1042083,06	9,9		
July	874039,77	8,3		
August	1166084,11	11,1	2949921,83	27,94
September	909797,95	8,6		
October	774654,34	7,3	2256337,87	21,37
November	725095,54	6,8		
December	756587,99	7,2		
<b>Total</b>	<b>10559092,06</b>	<b>100,0</b>		

The data obtained indicate an increase in the sales of antihistamine drugs depending on the seasons of the year and the periods of flowering of "dusty" plants, typical for the CMW region [8]. In connection with the beginning of flowering and pollination of plants, the "peak" of sales of antihistamine drugs was registered in the spring-summer months from April to September.

At the second stage, we analyzed the cost range of antihistamine drugs presented on the regional pharmaceutical market. It was found that it is in the range of 30.92 rubles for one package (Diazolin 50 mg in dragee, № 10 in a package, manufacturer - "AVVA RUS") up to 787.67 rubles per package (Lordestin 5 mg in a tablet, № 30 in a package, manufacturer - "Gedeon Richter-RUS"). The data obtained made it possible to distribute all antihistamine drugs into three price subgroups: I – cost up to 100 rubles; II – from 101 to 500 rubles; III – over 500 rubles for one package.

The first price subgroup (I) included 23 TN antihistamine drugs, which amounted to 34.8% of the range of drugs sold in this group. In this group, the prevailing drugs for TN Diazolin, presented in 14 dosage forms and dosages. Diazolin's price ranges from 35.23 rubles up to 71 rubles per package, depending on the manufacturing organization and packaging. It should be noted that

patients' adherence to the purchase of the drug Diazolin 100 mg in dragees, № 10 in a package (manufacturer – "Valenta Pharm"), more than 2900 packages of which were sold during the study period. In addition to Diazolin, this subgroup includes such commonly marketed drugs as: Tizin® classic nasal spray 0.1% 10 ml in a bottle; Cromohexal eye drops 2%, 10 ml in a bottle; Erius 5 mg tablet, № 10 in a package. For the fullest satisfaction of patients' preferences, it is necessary to constantly have these drugs in the range of pharmacy organization. As a rule, the affordable cost of a medicinal product for a patient is a driver of spontaneous and quick purchase, which has a positive effect on the revenue of a pharmacy organization [9].

The second price subgroup (II) included 37 TN antihistamine drugs (56.06% of the total number of items). The most popular drugs were: Suprastin tablets, № 20 in a package; Fenistilgel, 30 (50) g in a tube; Cromohexal 2%, 15 ml aerosol. In this price subgroup, antihistamine drugs are presented in a wide variety of dosage forms: sprays, eye drops, tablets, gels, emulsion creams, which creates preferable conditions for the consumer when choosing the most convenient dosage form at an acceptable cost.

The third price subgroup (III) is represented by 6 TN

antihistamine drugs (9.09% of the total number of items). This group includes third-generation antihistamine drugs (Ksizal, Erius, Kestin, Lordestin, Rupafin), an important difference of which is the absence of such side effects as sedation [10].

The conducted marketing analysis of the regional market for antihistamine drugs showed a sufficient breadth and depth of the assortment portfolio of pharmacy organization, which, against the background of the current economic availability, fully meets the needs of patients suffering from allergic pathologies.

At the next stage of the study, an ABC analysis based on the Pareto principle was carried out. Nomenclature analysis of sales volumes and profits received from it, made it possible to distribute 66 TN antihistamine drugs into three subgroups:

A – providing 80% of the total profit. This subgroup included 17 TN antihistamine drugs (25.7% of the studied range).

B – provided 15% of the total profit. This group consisted of 16 TN antihistamine drugs (24.3% of the studied assortment).

C – provided 5% of the total profit. This subgroup included 33 TN antihistamine drugs (50% of the studied range).

Among the 17 TN antihistamine drugs of group A, the most demanded consumers were: Tizin, Suprastin, Fenistil, Suprastinex, Tavegil, Desal, Kromohexal, Diazolin, with a price range of 68.8 rubles up to 471.65 rubles for one conventional package [11]. It is important to note that drugs, which are the most marginal, are purchased regardless of the dosage form of release: drops, tablets, dragees, spray. Also, based on the data obtained, it was found that the individual preferences of patients are not influenced by the belonging of antihistamine drugs to the first, second or third generations and, often, they do not pay attention to the presence of a sedative effect, which

can be attributed to indicators of insufficient complete awareness of the population [12].

Of the 16 TN antihistamines of group B, most drugs (10 names) are presented in a dosage form in the form of tablets in various dosages. This includes mainly second-generation antihistamines. The retail cost of these drugs covers the II and III price subgroups.

Antihistamine drugs, included in the number of 33 TN of group C, are produced mainly in such dosage forms as tablets, dragees, syrup. Among these drugs, modern third-generation drugs prevail, the cost of which exceeds 500 rubles for one conventional package. It should be emphasized that the most expensive modern drugs have not yet had time to establish themselves in the pharmaceutical market, as a result of which the population's demand for them remains low. As a rule, this trend indicates an insufficient level of provision of patients with professional information by medical and pharmaceutical workers.

Based on the data obtained, it is important to note the need for constant availability in the range of antihistamine drugs in the range of pharmacy organization, which are in high demand among patients: Tizin classic nasal spray; Suprastin tablets; Fenistil gel; Fenistil drops; Suprastinex tablets.

At the final stage of the study, with the help of content analysis, for the presence of antihistamines, the "The List of vital and essential medicines for 2020" (List of VED) was studied. For drugs included in the List of Vital and Essential Drugs, the state establishes maximum selling wholesale and retail markups, taking into account the specifics of the socio-economic state of the regions of the Russian Federation.

In the List of VED, antihistamine drugs are presented by INN in subclass R06 – "Antihistamines of systemic action" of the ATX classification of drugs, including by groups (Table 2) [13]:

**Table 2.** Antihistamines on the "The List of vital and essential medicines for 2020"

ATX code group	Group name according to ATX classification	INN	Dosage form
R06AA	alkylamine esters	diphenhydramine	solution for intravenous and intramuscular injection; tablets
R06AC	substituted ethylenediamines	chloropyramine	solution for intravenous and intramuscular injection; tablets
R06AE	piperazine derivatives	cetirizine	drops for oral ingestion; syrup; film-coated tablets
R06AX	other antihistamines of systemic action	loratadine	syrup; suspension for oral ingestion; tablets

Thus, four INNs of antihistamine drugs fall under the system of state regulation of wholesale and retail prices in the Russian Federation. Of the 66 drug products of the studied drugs, 28 TN (42.4%) are analogs of these four drugs by INN, which ensures the economic availability of this group of drugs for the population.

Recently, data have appeared on the complex use of antihistamine drugs and enterosorbents in the treatment of allergic diseases [14]. This approach accelerates the elimination of the allergen from the patient's body, suppresses the body's sensitivity to its sensitizing effect, and, therefore, increases the effectiveness of antiallergic drug therapy.

## CONCLUSION

Studies have shown that the regional pharmaceutical

market has a significant range of drugs used for allergic diseases. As methodological approaches to optimizing the assortment portfolio of pharmacy organizations, in the example presented on the nomenclature of antihistamine drugs, can be used:

- analysis of sales volumes and identification of the rating of the most demanded drugs, which form about 80% of profits (ABC-analysis);
- cost analysis and analysis of the level of state regulation of drug prices on the regional pharmaceutical market.

The use of the proposed methodological approach makes it possible to increase the competitiveness of pharmacy organizations in the pharmaceutical market by optimizing the product offer and, as a result, increasing sales and profits.

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