



ANALYSIS OF THE VOLUME AND COST OF IMPORT OF METOCLOPRAMIDE TABLETS IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

We conducted an analysis of the volume and cost of the import of Metoclopramid tablets in the Republic of Uzbekistan with the assistance of the State Register of Medicines, Medical Supplies and Medical Equipment authorized for Medical Practice in the Republic of Uzbekistan in 2016-2020 and with the program «Drug Audit» including database information from 2016 to 2020. The results will serve as the basis for our further research on the development of production in the Republic of Uzbekistan of the tablet form of Metoclopramide.

KEY WORDS: *prokinetics, Functional gastrointestinal disorders (FGDs), metoclopramide, antiemetic drugs.*

INTRODUCTION

According to the decree of the President of the Republic of Uzbekistan «On additional measures to deepen reforms in the pharmaceutical industry of the Republic of Uzbekistan», in recent years, comprehensive measures have been implemented to improve the system of drug circulation, favorable conditions have been created for the development of the domestic pharmaceutical industry. At the same time, the domestic pharmaceutical industry does not sufficiently meet the needs of the population and medical institutions with pharmaceutical products [1, 3-5].

In order to further improve the provision of the population with high-quality, efficient and safe pharmaceutical products, expand production volumes, increase the scientific, technical and export potential of domestic manufacturers, as well as attract foreign direct investment, a five-year analysis was performed with further plans to improve the identified situation [7-9].

The concept for the development of the pharmaceutical industry of the Republic of Uzbekistan in 2020 - 2024 provides for: expanding

the range of pharmaceutical products produced taking into account advanced scientific experience and modern technologies, as well as the development of the pharmaceutical industry by stimulating the development and production of innovative pharmaceutical products, commissioning modern production facilities, and also modernization and strengthening of the material and technical base of existing industries; development of the domestic pharmaceutical industry by ensuring that organizations and enterprises comply with the requirements of standards harmonized with international requirements for the development and production of pharmaceutical products; attraction of investments and advanced technologies, including foreign pharmaceutical companies, to the creation of modern competitive production facilities for the production of pharmaceutical products; reducing imports of pharmaceutical products through modernization, increasing existing production capacities and mastering new types of pharmaceutical products, as well as by attracting investments; creation of modern educational, laboratory and research centers focused on the development of



original drugs, as well as generic drugs (generics) based on the original drugs in demand [1, 12-13].

Functional disorders of the gastrointestinal tract (GIT) can be attributed to diseases of the 21st century. Over the past decade, there has been a progressive increase in the number of patients with gastrointestinal symptoms that are not associated with organic lesions of the gastrointestinal tract [2, 15-17].

In recent years, a new group of medications has appeared - prokinetics, capable of correcting disorders of the motility of the digestive tract. These include a group of pharmacological drugs that, at different levels and with the help of various mechanisms, enhance the motor, primarily propulsive activity of the gastrointestinal tract [10].

Prokinetics are pharmacological drugs that, at different levels and using various mechanisms, change the propulsive activity of the gastrointestinal tract and accelerate the transit of a food bolus through it. Their potentiating effect on the motility of the stomach, duodenum, and, in some cases, the entire small and even colon is widely known. However, the usefulness of prescribing drugs of this group in gastroesophageal reflux disease is disputed by many leading gastroenterologists in the world [6].

An important indication for the use of prokinetics is vomiting of pregnant women or vomiting associated with chemotherapy of malignant diseases [11].

In the daily arsenal of a gastroenterologist, metoclopramide (cerucal) and domperidone (motilium, motoricum, perilium) are used. To answer the question of which group of drugs to give preference to for certain diseases, you need to know which parts of the digestive tract and how prokinetics act, and this depends on their mechanism of action [14-17].

Currently, only ondansetron (Osetron, Ontic, Onset) and metoclopramide (Metoclopramide, Metoclopramide-Darnitsa, Tomid) are available and used in clinical practice in Uzbekistan. The most widely used is Metoclopramide [7].

MATERIALS AND METHODS

In our research, we used the «DRUG AUDIT» program, data period 2016-2020, to determine the number of packages and costs associated with the supply of enterprises importing metoclopramide tablets, the volume of imports and the cost [7].

RESULTS AND DISCUSSION

When conducting marketing analysis, according to the «DRUG AUDIT» program, the import of Metoclopramide tablets in 2016, 2017, 2018, 2019 and 2020 was carried out mainly from the CIS countries (Belarus, Ukraine) enterprises such as BORISOVSKIY and DARNITSA, as well as from domestic enterprises in the Republic of Uzbekistan (GUFIK) (Table 1.2) [7].

Table 1
Information on the number of metoclopramide tablets in the Republic of Uzbekistan from the CIS countries for 2016-2020

Name of the drug and manufacturer / year	Metoclopramide 10mg tab. No. 50 (BORISOVSKIY, Belarus)	Metoclopramide 250mg tab. No.10 (BORISOVSKIY, Belarus)	Metoclopramide-Darnitsa 0,01g tab. No. 50 (DARNITSA, Ukraine)	Number of packages, pcs
2016	76211	0	0	76211
2017	202358	0	0	202358
2018	182350	0	0	182350
2019	171620	20700	0	192320
2020	132071	0	0	132071

Tablets of metoclopramide imported produced by enterprises of the CIS countries (Belarus and Ukraine) for five years amounted to 76211, 202358, 182350, 192320 and 132071, respectively. The analysis also provides data on the supply of metoclopramide tablets from foreign countries.

During the study period, the volume of imports of metoclopramide tablets from the CIS countries increased 2.6 times.

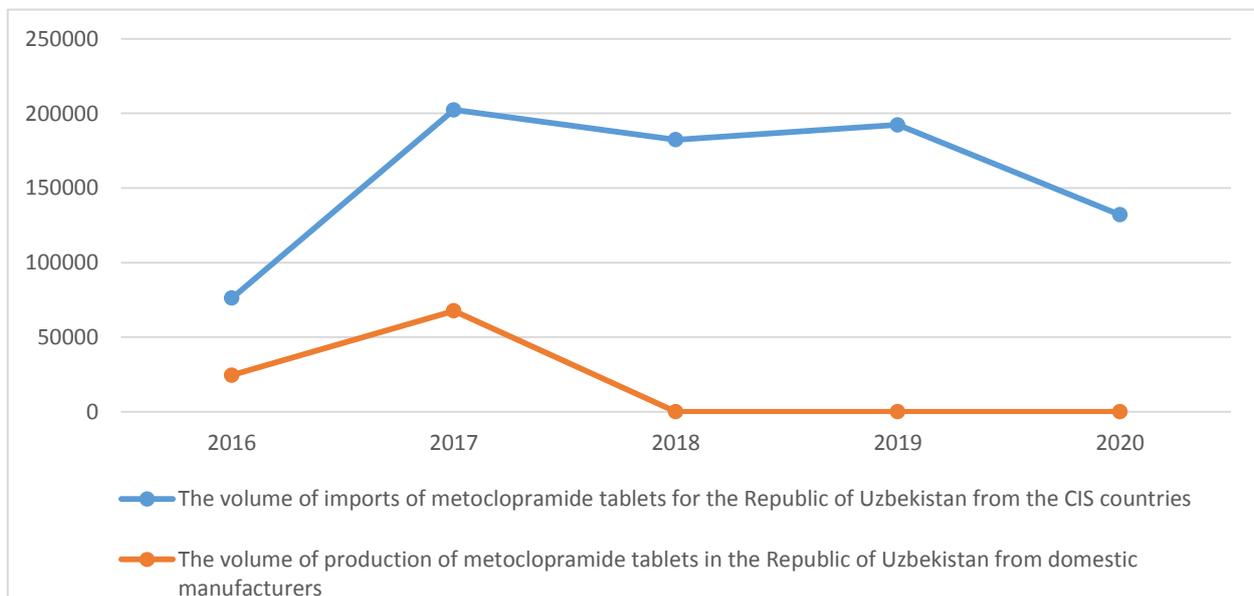
Table 2
Information on the number of Metoclopramide tablet preparations in the Republic of Uzbekistan from domestic manufacturers for 2016-2020

Name of the drug and manufacturer / year	Tomid 10mg tab. No. 50 (GUFIK, Uzbekistan)	Number of packages, pcs
2016	24 500	24 500
2017	67 689	67 689
2018	0	0
2019	0	0
2020	0	0

The data show that from 2016-2020, locally produced metoclopramide tablets were 24500, 67689, 0, 0 and 0 packs, respectively. In general, we see that

the production of metoclopramide tablets by local enterprises did not increase during the study period.

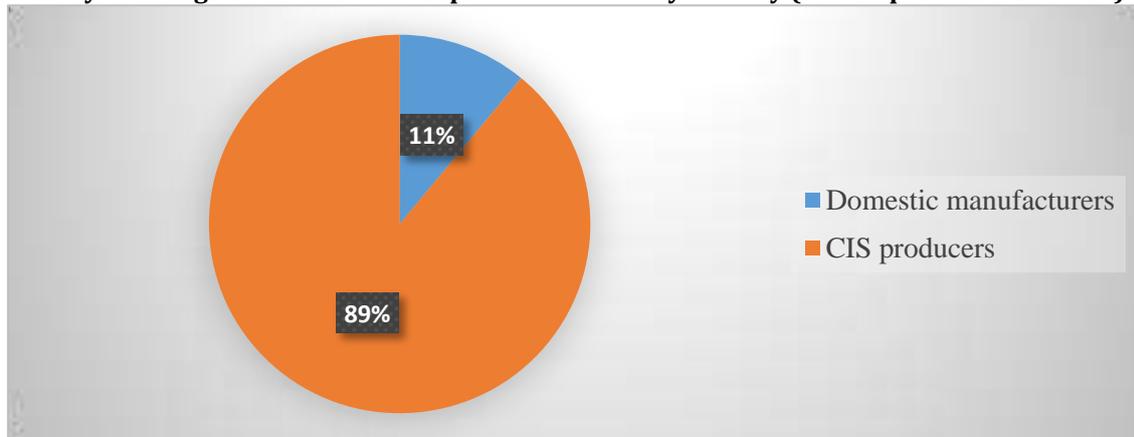
Figure 1
The volume of imports of Metoclopramide from the CIS countries and the production of Metoclopramide in the Republic of Uzbekistan from domestic countries



The results show that metoclopramide tablets produced by local factories for five years averaged 11% of the total, with the remaining 89% of

drugs imported into the country for consumption through foreign exchange (Figure 1.2).

Figure 2
Analysis of registration of metoclopramide tablets by country (for the period 2016-2020)



The determination of the costs associated with the supply of the antiemetic drug Metoclopramide for one package to the

pharmaceutical market of the Republic of Uzbekistan can be found in Table 3.

Table 3
The cost of metoclopramide tablets per package (\$) from the CIS and domestic enterprises in the Republic of Uzbekistan (2016-2020)

Name of the drug and manufacturer / year	Metoclopramide 10mg tab. No. 50 (BORISOVSKIY, Belarus)	Metoclopramide 250mg tab. No.10 (BORISOVSKIY, Belarus)	Metoclopramide-Darnitsa 0,01g tab. No. 50 (DARNITSA, Ukraine)	Tomid 10mg tab. No. 50 (GUFIK, Uzbekistan)
Price for 2016 (for 1 package, \$)	1.13	0	0	0.83
Price for 2017 (for 1 package, \$)	0.66	0	0	0.87
Price for 2018 (for 1 package, \$)	0.31	0	0	0
Price for 2019 (for 1 package, \$)	0.33	0.07	0	0
Price for 2020 (for 1 package, \$)	0.32	0	0	0

The results of a marketing analysis of imports of produced Metoclopramide tablets from the CIS enterprises in 2016 86118 foreign currencies, in 2017 133556 foreign currencies, in 2018 56529 foreign currencies, in 2019 58084 foreign currencies and 40627 foreign currencies in 2020. This shows that during the study period the price of

metoclopramide tablets increased by 3.2 times (Table 4).

The prices of the metoclopramide tablets produced from domestic enterprises in 2016 amounted to 20335 foreign currencies, in 2017 58889 foreign currencies, in 2018-2020 the production of metoclopramide tablets was not carried out. As a

result of the analysis, from 2016 to 2017, prices increased by 3 times (Table 5).

Table 4
Import prices of manufactured Metoclopramide tablets from CIS enterprises

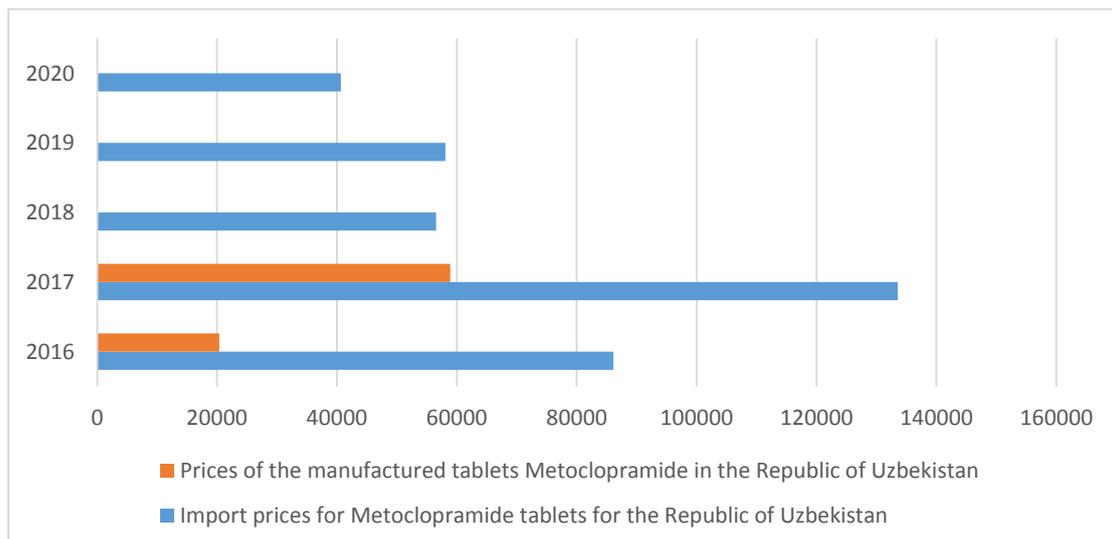
Name of the drug and manufacturer / year	Metoclopramide 10mg tab. No. 50 (BORISOVSKIY, Belarus)	Metoclopramide 250mg tab. N10 (BORISOVSKIY, Belarus)	Metoclopramide-Darnitsa 0,01g tab. No. 50 (DARNITSYA, Ukraine)	Total cost (\$)
2016	86118	0	0	86118
2017	133556	0	0	133556
2018	56529	0	0	56529
2019	56635	1449	0	58084
2020	40627	0	0	40627

Table 5
Prices of produced Metoclopramide tablets from domestic enterprises

Name of the drug and manufacturer / year	Tomid 10mg tab. No. 50 (GUFIK, Uzbekistan)	Total cost (\$)
2016	24500	20335
2017	67689	58889
2018	0	0
2019	0	0
2020	0	0

A comparison of prices for 2016-2020 of metoclopramide tablets in the Republic of Uzbekistan supplies from the CIS countries and from domestic manufacturers can be seen in Figure 3.

Figure 3
Analysis of the cost of metoclopramide tablets in the Republic of Uzbekistan (2016-2020)





CONCLUSION

Thus, we have studied the supply of Metoclopramide tablets in the Republic of Uzbekistan. The result of the analysis of the above data shows that from the domestic manufacturers of the tablets metoclopramide is gradually increasing, but still, the percentage shows that the metoclopramide tablets are supplied mainly through imports, which is much higher in comparison with the volume of domestic manufacturers in the Republic of Uzbekistan. This indicates that in the future it is necessary to develop the technology for the production of metoclopramide tablets produced by domestic manufacturers. Given the fact that the population's demand for this drug remains high, this area today remains relevant for further research.

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