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EVALUATION OF PHARMACEUTICAL PROVIDING OF THE PATIENTS WITH PEPTIC ULCER OF THE STOMACH AND DUODENUM BY MEANS OF ABC ANALYSIS

It is conducted the analysis of pharmaceutical providing of the patients with peptic ulcer and duodenal ulcer using ABC analysis and it is determined the share of the cost of each medicines in their application of total consumption. According to the results of medicines' ranking 9 medicines of the international non-proprietary names (INN) (25,71 % of total number of medicines), were included in group A the main part of them were medicines that affected the function of the digestive system. Group B was formed of 15 medicines for the INN (42,86 %) belonging to different pharmacological groups, and group C were 11 medicines by INN (31,43 %).

Key words: peptic ulcer and duodenal ulcer, pharmaceutical providing, costs, ABC analysis

STATEMENT OF THE PROBLEM

Nowadays peptic ulcer and duodenal ulcer remain one of the most wide spread diseases in the clinic of internal diseases. The structure of the digestive system pathology in children the share of peptic ulcer varies from 1,7 to 16 %. The prevalence of the disease among adults around the world is from 5% to 15% (in average 7-10%). Peptic ulcer and duodenal ulcer are chronic and often these diseases are accompanied by the development of serious complications (bleeding, perforation, penetration, etc.) which lead to the reduction of the patients' quality of life and is a major cause of mortality. It should note also significant costs that accompany both the treatment of diseases and their complications. So, the cost of treatment of peptic ulcer constitute 1/3 of the cost of public health in gastrointestinal disease in the UK. In Germany, more than 500 million euros are consumed only for the purchase of antisecretory drugs each year [1]. Hence, it can be argued that the assessment of the pharmaceutical providing of the patients with peptic ulcer and duodenal ulcer in Ukraine is actual.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

In accordance with the existing legal and regulatory framework, ABC analysis is an important component of pharmacoeconomic research, the results of which can be used in the development of

rational models of the pharmaceutical and diagnostic providing of the patients. Due to the results of ABC-analysis it can be taken administrative and management decisions, it is possible to identify a program of targeted interventions to improve the medication use, update restrictive list of medicines (exclude / include certain medicines).

For pharmaceutical companies the results of the ABC analysis provide additional opportunities for promotion at the hospital segment of the market. Overall, the results of medicines consumption is relevant pharmaceutical marketing tool in the development or improvement of each element of the marketing mix, namely the prices, the fulfillment of product and assortment policy tasks, as well as in the implementation of advertising and informative work [2,4,5,6,7,9].

THE RELEASE OF UNRESOLVED PARTS OF THE GENERAL PROBLEM

The methodology of the selection of the registered range of the most effective, safe and available in value-based drugs for formulary lists of medical standards for the treatment and prevention of relapse of peptic ulcers of the stomach and duodenum has already worked out and tested in Ukraine [3]. However, the ABC analysis for further improvement of medical and pharmaceutical care of the patients with peptic and duodenal ulcers in a specialized inpatient department hasn't been performed yet.

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FORMULATION OF THE TARGETS OF THE ARTICLE

The aim of the study was the conducting of the ABC-cost analysis of the pharmaceutical providing of the patients with peptic ulcer of the stomach and duodenum for further use of the results in the development of organizational and economic measures to improve the access to the medical and pharmaceutical care of the determined category of the patients.

Materials and methods

To estimate the costs of pharmaceutical providing the patients with peptic ulcer of the stomach and duodenum was used ABC analysis.

We studied the physicians prescriptions of the patients with gastric ulcer, duodenal ulcer (code according ICD-10: K25, K26), the amount of which for each separate nosological forms was 53 (45,30 %), and 64 (54,70 %) respectively. In a total number of the patients 83 ones were men (70,94 %), and 34 (29,06%) were women. Almost all patients are working and classified as workers and employees. The average length of in-patient treatment of the patients was 21-day bed.

For the ABC-analysis were taken 117 variants of the physician prescriptions of the medicines to the patients who were given medical treatment in a specialized hospital department of Zaporizhzhya region in 2014. To calculate the amount of expenditure the data from reporting documentation of the health care setting were used. Processing of the results was performed using spread sheet «MS Exel».

Results and discussion

ABC analysis is a method of the distribution of the share of medicines' costs in total costs for pharmacotherapy of the most expensive to the least expensive according to their actual use for the certain period.

Pareto principle is the basis of the methodology of ABC analysis according to which is fair to say that the relatively small number of control elements together allows you to control the situation in a whole. Control over 20 % of the aggregate of purchased items, allows you to control 80 % of the costs.

In relation to pharmacotherapy the ABC analysis is a distribution of medicines into three groups depending on the part of the monetary expenses of their use in the total costs for medicines during a certain period (one month, six months, year):

- Group A (the most expensive) drugs representing the main (80%) amount of funds;
- Group B (medium expensive) drugs, which consumes 15-20% of the funds;
- Group C (the least expensive) drugs, which together spent no more than 5 % of total expenses.

According to the Pareto principle, the costs of purchasing only 15-20 % of the drugs require 80 % of the funds of the common items. In contrast, a significant portion (70 %) range is no more than 5-10 % of total costs. Thus, the costs can be significant as on the medicines that are used seldom, but are expensive, and the cost of medicines that are used frequently. Therefore, careful attention to the medicines of group A, thoroughly selection of the medicines of this group can significantly affect the degree of economic feasibility of pharmacotherapy.

Depending on the actual needs, the following options of ABC analysis conducting are possible:

- analysis of the drugs which is used in definite pathology;
- analysis of the medicines within one pharmacological (pharmacotherapeutic) group;
- analysis of the drugs in a particular branch of health care setting;
- analysis of the drugs in individual health care setting (region, department).

Comparing the results of the ABC, VEN- frequency methods provides the ability to create a holistic imagination how rational from a clinical and economic perspective is the real pharmacotherapy in this health care setting (or in a separate section) and how you can improve its quality and economic feasibility [4, 7, 8, 9].

During the study period the patients with peptic ulcer and duodenal ulcer was prescribed 35 medicines by INN, by trade names was 78.

Next the indicator of the cost of consumed drugs was calculated, which is equal 37590,00 grn, which in terms of one patient is 321,28 grn.

The next stage of the research was the ranking in terms of actual medicines use and their distribution on the ABC group. To the group A were classified the drugs, the consumption of which was equal to 30105,83 grn, or 80,09% of the total consumption to the group B is 5676,09 grn (15,1%) and to the group C is 1808,08 grn (4,81%), respectively. The results of the ABC analysis (fragment of the study) are presented in the table.

The group A is included 9 medicines under the international non-proprietary names (INN) (25,71% of the studied range), the main part of which were medicines that affect the function of the digestive system and antimicrobial agents. The Group B was formed by 15 medicines for the INN (42,86 %), belonging to different pharmacological groups, and group C has 11 medicines by INN (31,43 %). It should be noted that the group C includes medicines, the administration of which is necessary to treat concomitant pathology in patients with peptic ulcer and duodenal ulcer.

Among the costs associated with pharmaceutical providing of the patients the major part of the medicines belongs to the pharmacotherapeutic group «Medicines affecting the function of the digestive system» and «Antimicrobials». The consumption values for these groups is 31391,41 grn (83,51% of the total consumption).

Table

THE RESULTS OF THE ABC-ANALYSIS OF THE DRUG CONSUMPTION BY THE PATIENTS WITH PEPTIC ULCER OF STOMACH AND DUODENUM (FRAGMENT OF THE STUDIES)

ATC code	INN	Consumption		ABC
		grn	%	
J01FA09	Clarithromycin	11713,57	31,16	A
A02BC01	Omeprazole	6342,17	16,87	A
J01CA04	Amoxicillin	4017,87	10,69	A
A02BX05	Bismuth subcitrate	1812,48	4,82	A
A02AD01	Aluminii hydroxid + Magnesii hydroxid	1415,32	3,77	A
J01X D01	Metronidasole	1201,13	3,19	A
	.....	....	.....	A
Together of the group A :		30105,83	80,09	
A02BD05	Omeprazole + Amoxicillin + Clarithromycin) 1000мг + 500мг+20мг	813,57	2,16	B
A02BC03	Lansoprazole	713,52	1,89	B
A02BX02	Sucralfate	699,15	1,86	B
J01A A07	Tetracyclin	627,82	1,67	B
A02BC02	Pantoprazole	503,12	1,34	B
A02BA03	Famotidine	425,17	1,13	B
A09AA02	Pancreatin	348,12	0,93	B
A07FA01	Lactobacterinum	298,37	0,79	B
	.....	....	.....	B
Together of the group B:		5676,09	15,1	
A03FA03	Domperidone	201,32	0,54	C
A03AD02	Drotaverine	181,15	0,48	C
	.....	....	.....	C
Together of the group C:		1808,08	4,81	C
Together of the groups A, B, C:		35790,00	100	

Thus, the study of the medicines' consumption by means of ABC-analysis using allows you to get an objective picture of the structure of the costs associated with the pharmaceutical's provision of the patients with peptic ulcer and duodenal ulcer. In the later monitoring of the costs of the drugs consumption, the comparison of the results of ABC-, VEN- and frequency analysis methods will

optimize and determine the ways to improve basic pharmaceutical provision of this category of the patients that is the subject of further research.

CONCLUSIONS OF THE STUDY AND PROSPECTS FOR FURTHER RESEARCH IN THIS DIRECTION

During the period of study the patients with peptic ulcer and duodenal ulcer was prescribed 35 medicines by INN, due to the trade names it was 78 medicines. Calculated general index of consumption was 37 590 grn.

It is proved that 25,71% of the range of applied medicines are the most expensive, and their third part (31,43%) is accounted to 4,81% of all costs associated with the pharmaceutical's provision of the patients with peptic ulcer of the stomach and duodenum.

Due to the results of the calculations of ABC analysis the consumption of medicines by the patients with peptic ulcer and duodenal ulcer it is found that the highest rates of consumption 83,51 % (31391,41 grn) have medicines that affect the function of the digestive system and antimicrobial agents, which belong to the groups A and B.

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ОЦІНКА ФАРМАЦЕВТИЧНОГО ЗАБЕЗПЕЧЕННЯ ХВОРИХ НА ПЕПТИЧНУ ВИРАЗКУ ШЛУНКА ТА ДВНАДЦЯТИПАЛОЇ КИШКИ ЗА ДОПОМОГОЮ АВС-АНАЛІЗУ

Проведено аналіз фармацевтичного забезпечення хворих на пептичну виразку шлунка та дванадцятипалої кишки за допомогою АВС-аналізу та визначена частка витрат кожного лікарського засобу (ЛЗ) на їх застосування у загальному обсягу споживання. За результатами ранжування ЛЗ до складу групи А увійшло 9 ЛЗ за міжнародними непатентованими назвами (МНН) (25,71 % від загальної кількості ЛЗ), основну частку яких складала ЛЗ, що впливають на функції органів травлення та антимікробні засоби. Група В сформована з 15 ЛЗ за МНН (42,86 %), що належали до різних фармакотерапевтичних груп, а група С – 11 ЛЗ за МНН (31,43 %).

Ключові слова: пептична виразка шлунку та дванадцятипалої кишки, фармацевтичне забезпечення, витрати, АВС-аналіз.

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ОЦЕНКА ФАРМАЦЕВТИЧЕСКОГО ОБЕСПЕЧЕНИЯ БОЛЬНЫХ С ПЕПТИЧЕСКОЙ ЯЗВОЙ ЖЕЛУДКА И ДВЕНАДЦАТИПЕРСТНОЙ КИШКИ С ПОМОЩЬЮ АВС-АНАЛИЗА

С помощью АВС-анализа исследовано фармацевтическое обеспечение больных с пептической язвой желудка и двенадцатиперстной кишки и определена доля расходов каждого лекарственного средства (ЛС) на их применение в общем объеме потребления.

По результатам ранжирования ЛС в состав группы А вошли 9 ЛС по международным непатентованным названиям (МНН) (25,71 % от общего количества ЛС), основную часть которых составляли ЛС, влияющие на функции органов пищеварения и антимикробные средства. Группа В сформирована из 15 ЛС по МНН (42,86 %), различных фармакотерапевтических групп, а группа С – 11 ЛС по МНН (31,43 %).

Ключевые слова: язвенная болезнь желудка и двенадцатиперстной кишки, фармацевтическое обеспечение, расходы, АВС-анализ.

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