

ANALYSING SALES VOLUME OF INSULIN-CONTAINING MEDICATIONS

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Sugar diabetes is an actual problem, and its solution depends on numerous factors. Provision of insulin-containing medications to patients with sugar diabetes on affordable prices is among these factors. Volume and structure of insulin-containing preparations that are present at domestic pharmaceutical market has been studied. Analysis of the data according to sales volume has been carried out. «Insultard» that includes insulin groups of moderate impact duration, occupies the leading position among all insulin and insuloid medications of this group. The sales share of this group equaled 66,6% according to the total medication sales. The data of insuloid import by distributing companies has been carried out, and their place and significance in the area of providing population with insulin-containing preparations has been defined.

Keywords: sugar diabetes, insulin, medications, distributor, pharmaceutical market

Search for methods of rational usage of medications is extremely actual for the healthcare of a country. Rational management of medications, used for treating sugar diabetes, has a special social significance for the population [1].

Sugar diabetes, regardless of all efforts by scientists and doctors of all world and also enormous financial costs on carrying out researches and development of efficient methods of treatment, still remains an urgent and, in its origin, unsolved problem [2].

During recent decades the problem of SD with its early complications has obtained an epidemic nature in economically-developed countries, and also great social-economic significance due to the high disease, disability, and death rate in the most active age [3].

From the point of pharma-economic analysis, SD is a high-cost nosology for both patient and a state. In order to calculate financial losses of the state, one should embrace all possible expenses for diagnostics, treatment, prevention of complications. The set classification of SD is directly linked to sugar contents in blood. SD of the first type (SD-1) is linked to an absolute

insulin deficit and usually developed among young patients (under 40). The origin of SD of the second type (SD-2) lies in decrease in sensitivity of peripheric tissues to insulin in combination with a decrease in insulin secretion by beta-cells of pancreatic gland. Normally, it is spread among patients of older age [4].

Treating patients with SD is carried out according to treatment standards, accepted in Republic Uzbekistan. Insulin-containing medications (ICM) are included into standards of treating SD-1.

Research goal: studying volume and structure of ICM supply at pharmaceutical market of Republic Uzbekistan. Possibilities, provided by modern statistics allow us to use greater target groups in our analysis. In our case we have used registered ICM, used in treating SD-1 as such group. Analytic data of the base «Drug Audit 2013» for the period 2008-2012 has been used in the research. The analysis of this data has been carried out via means of table editor Microsoft Excel.

Table 1 uses results of the statistic selection with indication of medication group, trade marks, and sale sums for the period 2008–2012.

Table 1

General characteristic of medications, used for SD-1 and their sales volume for the period 2008–2012

Trade marks	Annual sales volume, USD.				
	2008	2009	2010	2011	2012
1	2	3	4	5	6
Group «Insulins of ultrashort impact»					
Novorapid Penfil	0	0	0	7 875,00	5 250,00
Humalog	1 064,00	0	0	4 266,50	0
Apidra	0	0	0	0	0
Total per group:	1 064,00	0	0	12 141,50	5 250,00
Group «Insulins of short impact»					
Humulin regular	852 788,40	0	0	30 727,20	18 115,00
Insuman rapid	0	11 583,00	0	0	0
Actrapid	1 147 980,00	0	0	98 400,00	450 183,25
Actrapid penfill	87 500,00	0	17 500,00	20 040,00	44 255,00

End of Table 1

1	2	3	4	5	6
Vosulin R	64 907,80	0	0	0	
Gensulin R	47 400,00	204 280,00	1 731 051,74	213 360,00	25 000,00
Gansulin R	13 000,00	0	0	0	59 400,00
Zhuslin R	0	0	0	0	0
Monoinsulin CR	0	0	0	0	0
Total per group:	2 213 576,20	215 863,00	1 748 551,74	362 527,20	596 923,25
Group «Insulins of moderate impact duration»					
Zhuslin N	0	0	0	0	0
Vosulin N	101 080,00	0	0	0	0
Gansulin N	13 000,00	0	0	0	59 400,00
Gensulin N	19 260,00	255 884,00	3 466 244,10	305 040,00	25 000,00
Insulatard	1 704 480,00	0	0	118 080,00	3 326 330,00
Insulatard Penfill	87 500,00	0	25 000,00	50 100,00	58 450,00
Insuman Bazal	0	41 504,40	0	0	0
Protamin-insulinCS	0	0	0	0	0
Humulin NPH	1 674 964,00	0	0	59 133,40	56 110,00
Total per group:	3 600 284,00	297 388,40	3 471 244,10	532 353,40	3 525 290,00
Group «Insulin of long impact»					
Levemir Penfill	0	0	0	10 500,00	10 500,00
Lantus	41 276,40	101 244,00	210 198,12	364 478,40	211 215,00
Total per group:	41 276,40	101 244,00	210 198,12	374 978,40	221 715,00
Group «insulin combinations»					
Novo mix 30 penfill	0	0	0	7 875,00	5 250,00
Mixtard 30 penfill	87 500,00	0	25 000,00	33 400,00	66 800,00
Humulin M3	326 284,00	0	0	79 520,00	56 110,00
Vosulin 30/70	245 115,70	0	0	0	0
Gansulin 30 R	13000,00	0	0	0	118 800,00
Gensulin M10	0	0	0	0	0
Gensulin M20	0	0	0	0	0
Gensulin M30	19 260	12 060,00	857 536,68	115 000,00	50 000,00
Gensulin M40	0	0	0	0	0
Gensulin M50	0	0	0	0	0
Zhuslin 30/70	0	0	0	0	0
Mixtard 30	581 340,00	0	0	135 300,00	643 330,00
Insuman comb. 25	0	0	19 200,00	72 000,00	0
Total per group:	1 272 499,70	12 060,00	901 736,68	443 095,00	940 290,00
Total:	7 128 700,30	626 555,40	6 351 730,64	1 725 075,50	5 289 498,25

Source. Database «Drug Audit 2013» produced by «Evro Farmis».

Thus, total sum of medication market in 2012 equaled 5289498,25 USD. At the same time, a certain decrease in dynamic sales growth during the period 2008-2012 has been registered. Medications of the group «Insulins of moderate impact duration» lead in total sum of realization (2008 – 3600284,00 USD or 50,5%; 2009 – 297388,40 USD or 47,5%; 2010 – 3471244,10 USD or 54,6%; 2011 – 532353,40 USD or 30,8%; 2012 – 3523590,00 USD or 66,6%). We should outline that the lowest sales volume of ICM, registered in 2009, equaled 626555,40 USD.

The second biggest part of the gross volume is occupied by «Insulins of short impact»: 2008 – 2213576,20 USD or 31,0%; 2009 – 215863,00 USD or 34,4%; 2010 – 1748551,74 USD or 27,5%; 2011 – 362527,20 USD or 21,0%; 2012 – 596923,25 USD or 11,3%.

An increase in sales volume is defined by increasingly active marketing of such medications as, first of all, Actrapid (NOVO NORDISK, Denmark). In 2012 it formed 450183,25 USD or 75,4% of total market share of preparation group «Insulins of short impact». The next medication is Gensulin R (BIOTON S.A.,

Poland), in 2010 total sales of the preparation equaled 1731051,74 USD or 98,9% of the total share of preparation group «Insulins of short impact», and 27,2% of total ICM sales in 2010. A trend to decrease in sales growth for the medication Hemulin regular, produced by ELY LILLY (USA) has been registered. At the same time, total sales volume has been relatively unstable: 2008 – 852788,40 USD (38,5%); 2012 – 18155,00 USD (2,5%) of gross sales of preparation group «Insulins of short impact».

The third place in total volume of sales is occupied by the 13 preparations of the group

«Insulin combinations». Their sales in 2008 equaled 1272499,70 USD (17,8%); in 2009 – 12060,00 USD (1,9%); in 2010 – 901736,68 USD (14,1%); in 2011 – 443095,00 USD (25,7%); in 2012 – 940290,00 USD (17,7%).

Sales leaders among medications are presented in Table 2. Medication Insulatard that contains insulin groups of moderate impact duration, occupies the leading position among all insulin and insulinoid preparations. Its share in total sales volume of preparation group «Insulins of moderate impact duration» equaled 66,6%.

Table 2

Sales of insulin-containing medication groups

Number	Pharmacological group	Share in total sales volume, %	Sales leader within group
1	Insulins of ultrashort impact	0,2	Novorapid Penfill
2	Insulins of short impact	11,3	Actrapid
3	Insulins of moderate impact duration	66,6	Insulatard
4	Insulins of long impact	4,2	Lantus
5	Insulin combinations	17,7	Mixtard 30

Source. Database «Drug Audit 2013» produced by «Evro Farmis».

Table 3 presents data on sales of medications (according to the number of packs), used for SD-1 by trade marks during 2012. Three leading positions by the end of 2012 belong to Insulatard (Novo Nordisk A/S, Denmark) – 1326000 packs or 76,7% of total ICM sales. It is followed by: Actrapid (Novo Nordisk A/S,

Denmark) – 165985 packs or 9,6% and Mixtard 30 (Novo Nordisk A/S, Denmark) – 159500 packs or 9,2%. Regrettably, local pharmaceutical market only provides products foreign origin as domestic pharmaceutical companies do not produce ICM, and all preparations are brought from foreign producers of pharmacy.

Table 3

Analysis of insulin-containing medications' sales volume during 2012 (by packs)

Number	Trade mark	Number of packs	Share in total insulin sales%
1	Actrapid	165 985	9,6
2	Actrapid penfill	2 650	0,15
3	Gensulin R	2 500	0,14
4	Gansulin R	11 000	0,63
5	Gansulin N	11 000	0,63
6	Gensulin N	2 500	0,14
7	Insulatard	1 326 000	76,7
8	Insulatard penfill	3500	0,20
9	Humulin NPH	3 500	0,20
10	Lantus	2 490	0,14
11	Mixtard 30 penfill	4 000	0,23
12	Humulin M30	3 500	0,20
13	Gansulin 30 R	22 000	1,3
14	Gensulin M30	5 000	0,29
15	Mixtard 30	159 500	9,2
16	Other insulins	1850	0,10
Total:		1 726 975	100

Source. Database «Drug Audit 2013» produced by «Evro Farmis».

Table 4 presents analysis of ICM sales at pharmaceutical market of Republic Uzbekistan in 2012 by distributors. During the data analysis we have discovered that Ministry

of Healthcare of Republic Uzbekistan is included into the list of distributors, though it doesn't take part in purchasing and realizing medications.

Table 4

Analyzing data of distributing companies that realized ICM at pharmaceutical market of republic Uzbekistan in 2012

Number	Distributing companies	Sales volume, USD	Share in total sales volume, %
1	Ministry of Healthcare	3 777 863,25	71,4
2	SJSC Dori-Darmon	939 959,40	17,7
3	Neo Pharm	237 600,00	4,49
4	Medilife Pharma	130 335,00	2,46
5	CHR Apteka	100 000,00	1,90
	Other distributors	103 740,00	1,96
	Total sales volume in 2012	5 289 498,25	100

Source: database «Drug Audit 2013» produced by «Evro Farmis».

In 2012 Ministry of Healthcare imported ICM into pharmaceutical market in total sum of 3777863,25 USD, and it forms 71,1% of gross sales volume of ICM. The imported medications have been distributed among patients with SD-1 through endocrinological hospitals, specialized clinics, and polyclinics.

The second place among ICM importers belongs to SJSC «Dori-Darmon» that imported medications of 939959,40 USD, and this sum formed 17,7% of total sales volume.

These to importers are followed by companies «Neo Pharm» – 237600,00 USD or 4,49%, «Medilife Pharma» – 130335,00 USD or 2,46%, «CHR Apteka» – 100000,00 USD or 1,9%.

Other distributors are: «Orion Pharm Medical Plus» – 56076,00 USD or 1,06%, «Atm Partners» – 19626,60 USD or 0,4%, «Pharmazone Trade» – 14019,00 USD or 0,2%, «Kura-cio Pharm» – 14019,00 USD or 0,2%.

Resume

Analysis of ICM realization during the period 2008–2012 has been carried out. The anal-

ysis results show that a great attention is paid to patients with SD-1 in Republic Uzbekistan. All ICM of the republic's pharmaceutical market are imported from foreign pharmaceutical producers for foreign currencies. Organizing production of ISM at domestic pharmaceutical enterprises is a global problem of the state, as it will provide for solution of the problem of providing medications to patients with sugar diabetes due to a decrease in market prices. A solution to the question of saving funds, allocated by the state, is also possible.

References

1. Aliyev S.U., Zainutunov K.S. Analyzing sales volume of medications, used for treating iodine-deficit diseases during the period 2004–2008 // Pharmaceutical messenger of Uzbekistan. – Tashkent, 2009. – № 3. – P. 23–26.
2. Chernysh P.P. The role of energetic exchange between cells in pathogenesis of sugar diabetes of the 2nd type // Medical magazine of Uzbekistan. – Tashkent. – № 1. – P. 72–79.
3. Yuldashev S.S. A successful treatment of sugar diabetes of the 1st type using Eastern pulse diagnostics // Medical magazine of Uzbekistan. – Tashkent, 2011. – № 4. – P. 109–110.
4. Kulikov A.Y. Sugar diabetes pharma-economic analysis of high-cost nosology // New Pharmacy. – Moscow, 2011, April. – P. 59–61.