

# Effects of Generic Medicines Containing Losartan on Health Care Budget in Hungary 2007–2010

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**Background:** Under the legislation which came into force in 2007 (act XCVIII of 2006) regarding several drug-economical regulations, such as the improvement of market share of generic drugs, should have to led to decreased health care expenditures. This study illustrates an exception. Our study's objective is to highlight a possible cost-increasing effect of the aforementioned law, and to bring the legislators' attention to the latent problems in our health care system.

**Materials and methods:** We have used the databank of the National Health Insurance Fund (NHIF) in our analysis. The analysed active substance was selected due to the author's personal experience with the substance as a sales representative.

**Results:** Between January 2007 and August 2010 the quantity of administered drugs containing losartan as an active substance measured in packages increased by 18.75x, representing a 26.7x increase measured in DOT (Days of Treatment). The public reimbursement for this substance increased by 548% in the same period.

**Conclusion:** The legislation resulted in the increase of expenditures in some cases, such as losartan. It is important to pay more attention to the marketing activity of pharmaceutical companies. The change of medicines getting public reimbursement can be another important method for reducing the health care budget.

**Keywords:** generic medicine, losartan, treatment cost

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## Introduction

One of the most important questions regarding the health care system in Hungary, as in other developed countries, is to create a balance between the medically possible and the economically acceptable. Given the exponential development of science, special attention should be given to the increase of health care expenditures. Besides controlling and influencing the activity of pharmaceutical companies, it is also necessary to influence the attitude of physicians, pharmacists, medical staff and the patients, as well.

The purpose of this study is to highlight some of the latent correlations in the pharmaceutical industry, such as between the marketing activity of pharmaceutical companies and the intensified demand of the latest therapeutic methods.

In 2007, 959 medicines, while in 2008, more than 750 medicines had their price decreased. As a result, approximately 30 billion Hungarian forints (HUF) were saved each year for the National Health Insurance Fund (NHIF) and 15 billion HUF for the patients [1].

The legislation resulted in an increase or a decrease in the expenditures of different medicines. In some cases the increase was significant, such as in the example studied by this paper.

## Materials and methods

The possible negative effect of generic medicines on the health care budget is presented in this study by the example of the active substance losartan. The patent protection

of this substance expired after the legislation came into force in 2007. The selection of this substance was based on the authors' previous experience with losartan as a sales representative.

Data about the price, trade, reimbursement and distribution of different medicines were received from the public databank of the National Health Insurance Fund (NHIF) [2]. The analyses, diagrams and tables were made based on these data.

## Results

### Market situation at the launch of new generic drugs containing losartan

New generic medicines containing losartan were launched in July 2007. In Hungary, losartan was introduced in 1998 as the original drug Cozaar, representing at that time the most modern therapeutic method against hypertension. The first two generics were introduced in various doses and packages under the brand names Portiron<sup>®</sup>, produced by Gedeon Richter Ltd. (30 tablets per pack containing 25, 50 or 100 mg losartan) and Lavestra<sup>®</sup>, produced by Krka

**Table I.** Pricing of new generics in HUF (gross consumer price/ gcp/ and patient paid price /ppp/) and Total Sales in boxes

	2007.07.		2007.08.		2007.09.		2007.10.	
	gcp	ppp	gcp	ppp	gcp	ppp	gcp	ppp
Cozaar 50 mg 28x (Ft)	5798	2969	5798	2969	5798	2969	5798	2969
Package (pcs)	4542		4256		3772		4190	
Portiron 50 mg 30x (Ft)	4415	1987	2189	985	2189	985	2189	985
Package (pcs)	118		946		2265		3907	
Lavestra 50 mg 28x (Ft)	2196	1208	2196	988	2196	988	2196	988
Package (pcs)	1023		3392		4647		6408	

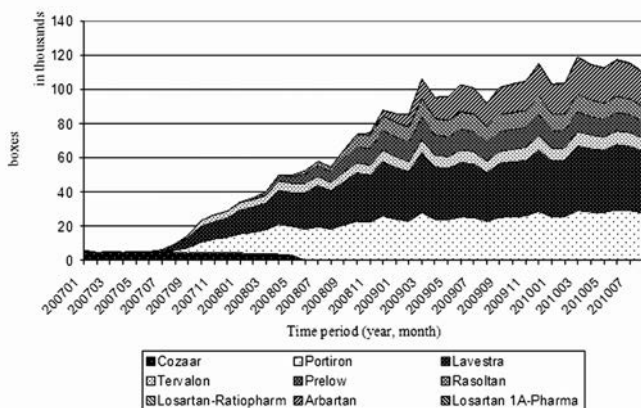
**Table II. Drug products containing losartan as active substance started before August, 2010**

	Brand name (tablets; active substance in mg)	Production start (year, month)	Pharmaceutical company
1	Portiron (30X; 25, 50, 100)	2007.07	Gedeon Richter Ltd.
2	Lavestra (28X; 12.5, 25, 50, 100)	2007.07	Krka Hungary Ltd.
3	Tervalon (30X; 12.5, 25, 50, 100)	2007.09	Zentiva
4	Prelow (28X; 12.5, 25, 50, 100)	2008.01	Medico Uno Pharma Ltd.
5	Rasoltan (30X, 12.5, 25, 50, 100)	2008.02	Actavis Group
6	Losartan Ratiopharm (28X; 50)	2008.07	Ratiopharm
7	Arbartan (30X; 25, 50, 100)	2008.09	Teva Hungary Ltd.
8	Artager (30X; 12.5, 50)	2008.10	Gerot Pharmazeutika GmbH
9	Losartan 1A-Pharma (30X; 12.5, 25, 50, 100)	2009.05	1A-Pharma
10	Stadazar (30X, 60X; 12.5, 50, 100)	2009.12	STADA Arzneimittel AG

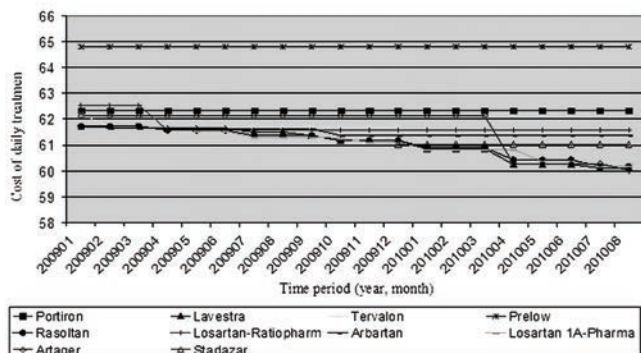
Pharmaceuticals (28 tablets per pack, containing 50 or 100 mg losartan) (Table I.)

**Changes in price and public reimbursement**

It is interesting to note that Portiron® was not able to become the market leader despite of the price reduction. Although the legislation accomplished its objective to lower the price of medicines, more questions appeared regarding the pharmaceutical market, which were not explicable by the principals of pure market economy.



**Fig. 1. Number of packages sold containing losartan as active substance**



**Fig. 3. Changes in cost of daily treatment (HUF) of medicines containing 50 mg losartan as active substance**

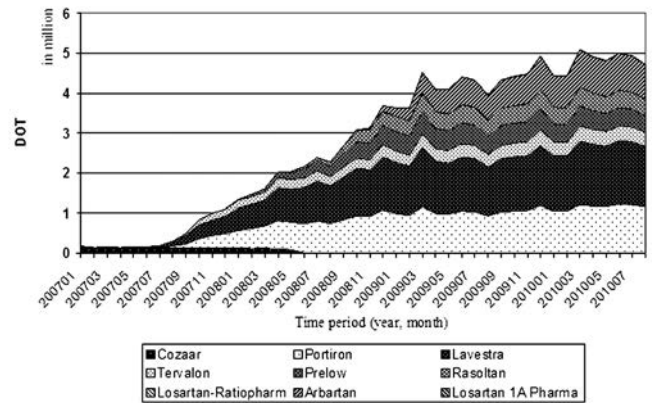
**Table III. Patient paid price and cost of daily treatment (CDT) in HUF in August, 2010**

	Brand name	Patient paid price HUF/pocket (50 mg)	CDT (HUF)
1	Portiron 30x	877	62.33
2	Lavestra 28x	757	60.11
3	Tervalon 30x	838	61.03
4	Prelow 28x	887	64.79
5	Rasoltan 30x	812	60.17
6	Losartan Ratiopharm 28x	797	61.57
7	Arbartan 30x	848	61.37
8	Losartan 1A-Pharma 30x	812	60.17
9	Artager 30x	810	60.03
10	Stadazar 30x	838	61.03

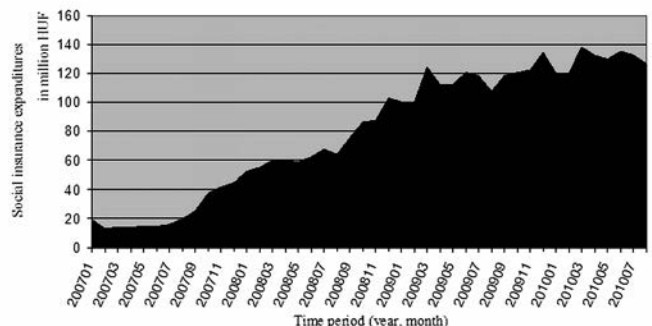
Patients treated with the new generic drugs had not taken the original medicine before. Because of new patient groups, the amount of sold medicines containing losartan increased by 2700% measured in DOT in the examined period. This means a 25x growth measured in packages (Tables II, III; Figures 1–3).

**Discussion**

Although medicines containing losartan became much cheaper, there were no savings for the healthcare budget. The social insurance expenditures increased by 550% from 2007 to August 2010 (Figure 4). This phenomenon is studied in another publication [3].



**Fig. 2. Medicines containing losartan as active substance in DOT**



**Fig. 4. Social insurance expenditures for all medicines containing losartan**

The price competition within a substance group had the purpose of decreasing public reimbursement. The remarkable difference in price of medicines containing the same active substance produced by different drug companies caused an increased usage, thereby increasing the expenses of the National Health Insurance Fund (NHIF) [2]. This effect is intensified by the marketing activity of new participants. Numerous studies pointed out the 8.3 times increased expenditures between 1990 and 2005, blaming changes in the population's medicine usage and the explosion of medicine prices [4].

According to the guidelines of the National Health Insurance Fund, the price of medicines has to be decreased in order to create the possibility to receive the most advanced therapy available.

Experience has shown that the price reduction does not appear automatically, as it would be expected in a perfect market model, thus governmental intervention cannot be avoided.

There are several different types of drugs available for the treatment of hypertension, with monthly cost of treatment ranging from a few hundred HUF to more than three thousand HUF. Several studies point out the higher efficiency of the more expensive drugs, however other studies show almost the same effectiveness with the cheaper ones.

## Conclusions

The presence of new participants in the price competition, the large amount of new drugs with the same active substance and the decrease in prices have led together to an increase in the sale of medicines containing losartan. To decrease the expenditures of the National Health Insurance Fund it may be necessary to control the marketing activity of pharmaceutical companies and to limit the number of generic medicines containing the same substance. One such measure could involve limiting the price of newly introduced generic medicines to be at least 10% lower than the price of the original or the first generic containing the same active substance. This limitation could probably make the job of the physicians easier and it would increase the cooperation of the patients.

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