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Economics And Pricing of Certain Segments of The Pharmaceutical Market

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ABSTRACT

Pharmaceutical innovations over the past half century have made it possible to effectively treat and prevent a wide range of diseases. These achievements were so important for modern healthcare that equal access to them is considered one of the basic human rights. This article examines the economics and pricing in certain segments of the pharmaceutical market. The authors analyze various aspects affecting drug prices and price formation mechanisms in various segments of the pharmaceutical industry. The article considers the role of pharmaceutical companies, government regulators and consumers in determining the prices of medicines. The authors investigate the influence of factors such as research and development costs, production costs, patent protection, supply and demand, as well as political and regulatory measures on the formation of prices for pharmaceuticals. It is noted that although the demand for medicines is one of the driving forces of pharmaceutical spending, price increase is the main problem for health system managers, as drug prices increasingly seem unfair. The paper also analyzes various pricing strategies used by pharmaceutical companies, including differentiated pricing, cost pricing and pricing based on the value for a patient. The authors explore the advantages and limitations of each strategy and offer recommendations on the optimal choice of pricing strategy in different segments of the pharmaceutical market. The article ends with the main conclusions and offers recommendations for pharmaceutical companies and government regulators regarding effective pricing in certain segments of the pharmaceutical market, taking into account economic, political and social factors. The study has an important meaning for understanding the complexities and challenges associated with pricing in the pharmaceutical industry and helps to determine optimal pricing strategies for various market segments.

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INTRODUCTION

The pharmaceutical industry is an important component of the global economy and has a significant impact on the health and well-being of the population. At the same time, it is also the subject of intense debates and discussions in connection with the issues of economics and pricing of medicines [1].

Pricing in the pharmaceutical industry has a complex nature and depends on many factors. Determining drug prices includes accounting for research and development costs, production costs, patent protection, supply and demand in the market, as well as policy and regulatory measures.

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Pharmaceutical pricing is of particular importance for consumers, as high prices can become an obstacle to access to the necessary medicines. At the same time, pharmaceutical companies face the need to ensure sufficient profits to invest in research and development of new medicines.

Achieving social value from pharmaceutical innovation requires a policy aimed at encouraging research and development funding in areas where there are significant unmet needs, while providing access to innovation. Time-limited market power through patents is one way to encourage investment in research and, ultimately, allows competition to lower prices and thereby expand access. Patents establish a "fair" balance in ideal markets characterized by competition between new and old technologies that serve the needs of fully informed consumers who face simple trade-offs between consumption and clearly defined budget constraints.

The purpose of this article is to study economics and pricing in certain segments of the pharmaceutical market. The paper considers various factors that affect the prices of medicines.

MATERIALS AND METHODS

In the process of writing this study, an analysis of an array of literature was carried out within the framework of the research topic, comparative and analytical research methods were also applied.

RESULTS

Pharmaceuticals are valuable commodities among the many commodities traded in the modern society. The factors influencing their pricing are relevant to both the welfare and economic development of nations. On the one hand, prices affect the availability of medicines and access to health products, and on the other, they are a decisive incentive for pharmaceutical companies to develop new products and, thus, for industrial policy [2]. The special nature of pharmaceutical markets (due to patent protection, third-party payers and low-price elasticity) has led to the introduction of regulation at the European markets. Various policy measures have been taken in the European Union to control pharmaceutical prices. These measures differ significantly from country to country, but have a common goal — the efficient distribution and maintenance of prices at a reasonable level, while in some countries it is possible to detect elements of industrial policy. Regulatory measures are aimed at both the demand side and the supply side. However, although the goal of regulation is usually to reduce costs, regulatory measures do not always have the desired effect on prices and sales volume due to market distortions. The cost of medicines is a major and rapidly growing component of healthcare costs. In some cases, research supports ethical arguments in favor of wider access. Other studies show that efforts to expand access have led to unintended consequences for innovation and medical needs of patients. Both ethicists and economists should be more aware of the real clinical conditions in which doctors work with real patients. Broader interdisciplinary collaboration between economists, ethicists, and physicians can help reduce the gap between innovation and access and improve access and patient care. This dialogue will have an impact on private industry and may stimulate new multi-stakeholder paradigms for drug discovery, development and pricing [3].

Economics and pricing in certain segments of the pharmaceutical market are complex and multifaceted processes. Each segment, such as innovative medicines, publicly available medicines and generics, has its own characteristics and factors that determine pricing. In the segment of innovative medicines that present new therapeutic opportunities or significant improvements over existing drugs, economics plays a key role. The costs of research and development (R&D) of new drugs are high, and pharmaceutical companies seek to recoup these costs through pricing. Patent protection grants companies monopoly rights to sell a drug for a certain period of time, which allows them to set higher prices.

However, the issues of the availability of these medicines and their cost for patients are also becoming important aspects. In the case of publicly available medicines that represent a wide range of medicines, pricing is often subject to competition. In this segment of pharmaceutical companies, there is a large selection of alternative drugs, which puts pressure on prices. Competition can lead to lower prices for publicly available medicines, especially in the presence of generics – similar drugs produced after the expiration of patent protection. Generics, or medicines similar to existing medicines, have their own economic model and pricing. Competition plays a key role in this segment, and prices for generics are often significantly lower than for original drugs. This is due to the lack of need for R&D financing and lower production costs [4].

Confidential price discounts allow manufacturers to charge different payers different prices. Keeping the final prices secret does not allow everyone to demand the lowest available price. If the final prices agreed on a confidential basis reflect the solvency of each healthcare system, such a pricing scheme will allow manufacturers to serve more markets than would be possible with more transparent pricing [5]. The mechanisms of price formation in different segments of the pharmaceutical industry may vary depending on a number of factors. The conditions of market equilibrium and the demand for products in this particular sector of the economy have paved the way for the introduction of state regulation. Regulation includes various strategies for influencing prices by creating rules that affect market dynamics related to supply and demand [6]. It also includes a policy aimed at the dynamics of the market related to the product, which is clearly seen in the example of the impact of patents and entry into the generic market [7] on pharmaceutical prices. Here are some of the main mechanisms that can be applied:

1. The release of innovative medicines. In this case, pricing can be determined based on the following factors: – research and development costs (R&D). Pharmaceutical companies include the cost of R&D in the price of a drug to recoup investment in the development of new drugs; – patent protection. When a pharmaceutical company is granted patent rights to sell a drug, it may allow them to set higher prices for drugs to offset costs and make a profit during the patent period; – the significance and uniqueness of the medicine. If a drug represents a significant therapeutic advantage or has a limited alternative, this may be reflected in a higher price.

2. The release of publicly available medicines. In the case of publicly available medicines, prices can be determined as follows: – competition. In this segment of pharmaceutical companies, there is a large selection of alternative drugs, and competition can put pressure on lowering prices.; – production costs. Production costs can also affect the prices of publicly available medicines. More efficient manufacturing processes can help reduce the cost of the drug.

3. Release of generics. Generic pricing can be based on the

following factors: – competition. Generics are similar drugs, and the presence of competition in this segment may lead to lower prices; – production costs. Generics usually have lower production costs compared to original drugs, since they do not require the cost of research and development of a new drug.

4. Taking into account the requirements of the insurance system and regulation:in many countries, health insurance systems and government regulators can play an important role in the pricing of pharmaceuticals. They can negatively or positively affect prices, for example, through price negotiations with pharmaceutical companies or the introduction of price restrictions.

5. Pricing based on patient value. Some pricing strategies in the pharmaceutical industry are based on patient value. This may mean setting the price depending on how effectively the drug solves a specific medical need and improves the patient's quality of life. In general, pricing in various segments of the pharmaceutical industry is a complex and multifactorial process. This includes accounting for research and development costs, market competition, regulatory and political factors, as well as the role of insurance and patient value [8].

Pharmaceutical companies, government regulators and consumers play important roles in determining drug prices. Here is how each of these parties affects the formation of prices:

1. Pharmaceutical companies

– Research and development costs (R&D). Pharmaceutical companies are investing huge amounts of money in R&D to develop new drugs. These costs have an impact on pricing, as companies seek to recoup their investments and make a profit;

– patent protection. When a pharmaceutical company is granted patent rights to sell a medicinal product, they gain a monopoly position in the market for a certain period of time. During this period, the company can set higher prices to maximize profits;

– competition and market conditions. Depending on the competition in a particular market segment, pharmaceutical companies can set prices based on supply and demand. Competition can put pressure on lower prices.

2.Government regulators

– price regulation. In some countries, government regulators have the authority to regulate drug prices. They can set price limits or negotiate with pharmaceutical companies to achieve more affordable drug prices.;

– registration and licensing. Government regulators also regulate the processes of registration and licensing of medicines. This affects the time and costs associated with the introduction of the drug to the market, which may affect its price.

3. Consumers

– solvency and demand. Consumers play an important role in determining drug prices through their ability

to pay for certain drugs. If consumers are willing to pay high prices for medicines, pharmaceutical companies can set appropriate prices. However, if demand is not high enough or consumers cannot afford high prices, this can lead to lower prices.;

– Public opinion and activism: Recently, consumers have become more informed about the prices of medicines and their availability. Public opinion and consumer activism can put pressure on pharmaceutical companies and government regulators to lower prices and make medicines more affordable [9].

In general, the interaction of pharmaceutical companies, government regulators and consumers has a significant impact on the determination of prices for medicines. This is a complex process that includes economic, legal, political and social aspects.

DISCUSSION

Pharmaceutical markets are characterized by price-inelastic demand, mainly due to extensive health insurance and supply-side market power associated with a patent system that protects new chemicals from being copied over a period of time. 1 This combination has led to the fact that most countries have applied various means to curb the growth of medical costs. 2The two most commonly used price control mechanisms in pharmaceutical markets are maximum Price regulation (PC) and reference pricing. Although these two systems pursue the same goal, namely, curbing (growth) of medical expenses, they differ significantly in their nature. Price cap regulation limits the ability of pharmaceutical firms to use market power by charging high prices. Indicative pricing, on the other hand, is aimed at stimulating competition, making the demand for pharmaceuticals more elastic in price.

Pharmaceutical companies use different pricing strategies for their medicines. Here are some of them:

1. Cost-based pricing. Pharmaceutical companies can set prices based on research and development costs, production costs, and other related costs. This allows companies to recoup their investments and make a profit.

2. Value-based pricing. In this strategy, the price of a drug is determined based on its value to the patient or healthcare. If the drug has significant therapeutic benefits or solves a rare or severe disease, the company may set a higher price.

3. Pricing compared to competitors. Pharmaceutical companies can analyze the prices set by competitors and set their prices based on this information. Depending on the positioning and characteristics of the drug, the price may be set higher or lower than that of competitors.

4. Pricing by market segments. Companies can apply different prices for different market segments based on the solvency and needs of patients. For example, the price for a certain group of high-income patients may be higher than for a lower-income segment.

5. Pricing of generics. Generics, i.e., similar medicines, usually have lower prices compared to original drugs. Pharmaceutical companies that produce generics can set prices by competing in cost with other generic manufacturers.

6. Pricing taking into account government regulations. In many countries, government regulators influence drug prices through the introduction of price restrictions [10].

Let’s consider the advantages and disadvantages of individual pricing strategies.

1.Advantages of a cost-based pricing strategy

- Transparency. Drug prices are determined on the basis of costs and expenses, which makes the pricing process more objective and transparent;

– return on investment. Companies can recoup their significant research and development, production and marketing costs through pricing, which allows them to continue investing in innovative medicines.;

– financial stability. Setting prices based on costs helps to ensure the financial stability of pharmaceutical companies and ensure their ability to develop and produce new medicines.

Disadvantages of a cost-based pricing strategy:

– high prices. This strategy can lead to high drug prices, especially in the case of expensive and innovative drugs, which can create accessibility problems for patients.;

– mismatch of value for the patient. Prices set solely on the basis of value do not always reflect the real value to the patient or society. Some important medications can have a huge positive effect on health, but have a high cost.

2.Value-based pricing

Advantages of value–based pricing strategy

- Reflection of value for the patient. This strategy allows you to set fairer and more appropriate prices that reflect the benefits and effectiveness of the drug for the patient and healthcare;
- promoting innovation. High prices for innovative drugs can encourage pharmaceutical companies to further research and development of new drugs that can solve medical needs.

Disadvantages of the value–based pricing strategy:

- subjectivity of the value assessment. Determining the value for the patient involves a subjective assessment, which can cause different points of view and disputes. Different stakeholders may have different opinions on how to determine the value of a particular drug;
- the complexity of measuring value [11].

3. Pricing compared to competitors

Advantages of the pricing strategy in comparison with competitors:

- competitive position. Setting prices comparable to those of competitors can help a pharmaceutical company maintain its competitiveness in the market and not lose market share as a result of higher prices.;
- accessibility for patients. Setting lower prices than competitors can make medicines more affordable for patients, especially when there is an alternative to drugs.
- Disadvantages of the pricing strategy compared to competitors:
- damage to profits. Setting low prices to compete with other pharmaceutical companies can reduce the profitability and financial stability of the company;
- limited price control. If a company exclusively focuses on competitors' prices, it may find itself in a situation where it does not have sufficient control over pricing policy and cannot adequately respond to market changes.

4. Pricing by market segments.

Advantages of the pricing strategy by market segments:

- adaptation to different segments. Setting different prices for different market segments allows pharmaceutical companies to adapt to different levels of solvency and patient needs;
- profit maximization. By setting higher prices for segments with a higher level of solvency, the company can maximize its profits while at the same time providing affordable prices for less affluent segments.

Disadvantages of the pricing strategy by market segments:

- difficulty in setting prices. Determining the optimal prices for each market segment requires a thorough analysis and understanding of the solvency and needs of each group of consumers;
- overlapping segments. Some patients may be on the edge between two segments, which can cause problems in determining the right price for them;
- risk of negative perception. Some market segments may consider the price difference unfair or discriminatory, which can lead to a negative attitude and reputational risks for the company.

Each pricing strategy has its advantages and disadvantages, and pharmaceutical companies can choose the strategy that best suits their goals, market position and the context of the environment in which they operate [12].

Problems arise in the pharmaceutical sector, because in healthcare there is rarely an ideal economic market that can distort the rewards for innovation and, consequently, investment in them. The pharmaceutical sector can potentially abuse market power due to the inelasticity of demand for the necessary medicines. Unlike consumers of conventional goods, consumers of patented medicines, also known as patients with medical needs, may not be able to postpone consumption until prices fall. In addition, unlike ordinary consumers, patients are often protected from treatment costs due to various forms of collective financing, primarily public or private health insurance. Companies can exploit patient vulnerabilities and collective financing schemes by requesting prices far in excess of standard value-for-money definitions.

Effective prescribing of medicines and minimization of risk for patients can be supported and increased due to educational barriers (classification for doctors) and information methods. Computerized decision-making support, online prescribing consultations and monitoring of prescriptions can help improve prescribing patterns. Another way to influence prescribing is the introduction of quotas for prescribing and the introduction of pharmaceutical budgets [13]. This motivates doctors to be economical when it comes to choosing between alternative treatments. Replacement of generics in a pharmacy encourages or obliges doctors to release generics instead of the corresponding originals. This helps to increase generic market share, profitability and stimulate entry into the generic market.

In addition, the authorities use refunds to return some of the discounts that pharmacists receive for generic drugs.

CONCLUSION

Pharmaceutical companies play a key role in determining drug prices. They take into account research and development costs, production costs, marketing costs, as well as expected profits when determining prices.

Government regulators also have a significant impact on pricing in the pharmaceutical industry. They can take measures to control prices, set standards and regulate the availability of drugs to the public.

Consumers, i.e. patients and healthcare systems, also play an active role in shaping drug prices. Their demand and preferences affect pricing, as well as their ability to pay for the cost of medicines.

Research and development costs are one of the key factors determining drug prices. Pharmaceutical companies face high costs for research, development of new drugs and clinical trials, which affects prices.

Production costs also affect the formation of prices for pharmaceuticals. High production costs, including raw materials, equipment, technological processes and quality control, can put pressure on prices.

Patent protection is an important aspect in pricing. Patent rights allow pharmaceutical companies to protect their innovative products from competition and set higher prices for drugs during the patent protection period.

Supply and demand affect the prices of pharmaceuticals. If the demand for a particular drug is high and the supply is limited, this can lead to higher prices. The reverse situation, when demand is low and supply is high, can lead to lower prices.

Political and regulatory measures also have an impact on the formation of prices for pharmaceuticals. Government agencies may introduce laws and regulations governing pricing, including limiting price increases, setting maximum prices or providing subsidies.

In general, pricing in the pharmaceutical industry is a difficult balancing act between the commercial interests of pharmaceutical companies, the needs of patients, the requirements of the government and the regulatory environment. This is a process that requires taking into account many factors and often causes discussions and disputes. Understanding these factors and their impact helps to better understand how pharmaceutical prices are formed and how they can vary in different contexts.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

All authors contributed in reviewing the final version of this paper

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