

The Analysis of Assortment of Antiviral Medicines in The Pharmaceutical Market

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Abstract

Etiotropic treatment of influenza and other **acute respiratory viral infections** (ARVI) includes a wide range of antiviral medicines. The objective of the study was to analyze the assortment of antiviral medicines in the pharmaceutical market of Armenia, to identify the leaders and investigation of the main sources of obtaining information on antiviral drugs by pharmacists. The study was carried out among 285 pharmacy employees during the 2019 – 2020. The study revealed that among the antiviral medicines the leader in monetary expression is the Kagocel (23%), the leaders in natural expression are the Anapheron and Oxolin ointment with small difference. The results of the research find out that main source of information about antiviral medicines for the treatment and prevention of influenza and ARVI pharmacy employees mostly using information provided by medical representatives (26%), which is not reliable sources. It can be concluded that drug information resources in community pharmacies in Republic of Armenia (RA) have to be improved. The OTC antiviral drugs market is not highly competitive and companies can increase their market share by introducing new marketing programs, pricing policy, relevant information provided to pharmacy employees.

Key words: antiviral medicines, viral infections, pharmaceutical market.

Introduction

The development of antiviral drugs is a very complex process. Currently, around 50 drugs have been approved for human use against viruses, including medicines with a restricted spectrum, mainly used for influenza, and the general spectrum used for influenza and ARVI (O.L.

Bryan-Marrugoa et al., 2015; Kramarev SA. Et al 2013). The global anti-viral therapeutics market was valued at USD 51.26 billion in 2020, and it is expected to reach USD 67.76 billion in 2026. Increase in epidemics of ARVI and influenza has resulted in increasing competition between key players for development of novel therapeutics (Anti-viral therapeutics market-growth, trends, covid-19 impact, and forecasts. 2012; ARVI. 2019). Today in competitive market, the marketing strategies play vital role in promotion of products and services. There are many pharmaceutical companies in the industry competing with each other. Pharmaceutical companies must change their marketing strategies to cope up with new challenges in the business environment (Amit Dwivedi. 2015). With the increasing usage of antiviral medicines, irrational medicine use and adverse drug reactions are also becoming important health care problems (Ofori-Asenso R. et al., 2016). Appropriate drug information is vital for the correct use of these drugs and improves patient outcome (Asmelashe Gelayee D. et al., 2017). However, this activity of pharmaceutical employees can be limited by a number of obstacles, such as lack of access and information on the sources of medicines. Contrary to the developed countries, where flow of health and drug information is quick and efficient, in the undeveloped third world countries, the flow of health and drug information is slow and, in most cases, there are inadequate sources of drug and health information (Nidal Jaradat et al., 2003; L.G. Nazaryan et al., 2021). The source of drug information is important especially in developing nations such as RA where strict medicine regulation is sometimes lacking. Such countries are at a distinct disadvantage if the practitioners cannot source reliable independent information about medicines.

The objective of the study was to analyze the assortment of antiviral medicines on the pharmaceutical market of Armenia, to identify the leaders and investigation of the main sources of obtaining information on antiviral drugs by pharmacists.

Material and methods

The study was carried out among the 285 pharmacy employees (selected randomly) residing in Armenia. This is descriptive cross-sectional research conducted by the Department of Pharmaceutical Management of the YSMU. During the 2019 – 2020 participants completed an anonymous self-administered paper-based questionnaire, which contained closed and open questions. Number of questionnaires distribution was determined by The Survey System Version 11.0. taking

into account the number of the drugstores, the reliability coefficient $t=1.96$, the first type error is with 5% probability ($\alpha = 0,05$), and the evaluation accuracy is 5% ($\Delta = 5\%$), $p=0.5$.

The questionnaire was compiled and applied by M.Y. Kinyev et al, Ural State Medical University :(<https://docs.google.com/forms/d/1E7NqejDOJW-Wa6GNlBpFzPfyMxw1GcYApUuBj8mO7o3k/viewform>). Data obtained as a result of surveys were registered in statistical SPSS software package (version 12.0).

Results

The results of the questionnaire survey carried out among 285 pharmacy employees with different experience and education. The research shows that most pharmacy employees have a 2–5-year (43%), employees had up to 2-year (31%), 6–10-year (19%), 11–20-year (5%) and 21–30 (2%) year work experience. Among 285 pharmacy employees it had been revealed that about 49% of them graduated from medical college (pharmacists), 34% had a master's degree and 17% had a bachelor's degree in pharmacy. Regarding the availability of antiviral medicines in their pharmacy, the answers were classified as follows: Kagocel and Anapheron 16%, Oxolin ointment 15%, Arbidol 14%, Amixin 13%, Lavomax 11%, Ingavirin 9%, Rimantadin 5%, other 1% (see fig.1).

The answers to the question 'which are the main sources, that you have been using for obtaining information about antiviral medicines for the treatment and prevention of influenza and acute ARVI' were classified as follows (see fig.2).

Regarding the question 'which antiviral medicines for the treatment and prevention of influenza and ARVI are considered to be the leaders with monetary expression, respondents select following antiviral medicines (see fig.3).

Regarding question which antiviral medicines for the treatment and prevention of influenza and ARVI are considered to be the leaders with natural expression, respondents select following antiviral medicines (see fig.4).

Discussion

The prevention and control of respiratory viral infections is a big problem because of their impact on the society in terms of health, quality of life and economy (Abed, Y., & Boivin, G. 2006). For this reason, a comprehensive study was conducted in the market of antiviral medicines used during acute respiratory infections and influenza. During the survey, the pharmacy employees have mentioned the antiviral medicines available in their pharmacy and the most often mentioned

medicines were Kagocel and Anaferon. In a similar survey conducted in Monchegorsk city Aciklovir was the most mentioned medicine and Kagocel had only an 11% share in this market (Dessalegn Asmelashe Gelayee et al., 2017). Community pharmacists are essential information providers for patients/ consumers and their sources of information must be reliable. The results of the research about obtaining information were analyzed and find out that main source of information about antiviral medicines for the treatment and prevention of influenza and acute respiratory viral infections pharmacy employees mostly using information provided by medical representatives (26%), as well Internet (15%), which are not reliable sources compared to a similar study in Ethiopia where medicines package inserts, treatment guidelines, and the pharmaceutical textbooks are the main information sources (А.Г. Сальникова и др. 2015). In another study conducted in Russia, the main sources of information about antiviral drugs for pharmacy employees are annotations of medicines and pharmaceutical publications (Кремса, А. А. и др. 2016). Since the pharmacy employees prefer information given from medical representatives as a source of main information about medicines, more attention should be paid to official sources of information during training and continuing education of pharmacy employees. In continuing education courses should include more skills and knowledge in this regard. It was also investigated which of the above-mentioned antiviral medicines for the treatment of influenza and acute respiratory viral infections were considered to be leaders of sale in monetary and natural expression, for a comparative analysis of the sale of medicines in this group. Based on the obtained results, it turns out the rates of the sale of antiviral medicines with monetary expression. As it turns out, some medicines (Kagocel 23%, Oxolin ointment 19%, Anapheron 19%, Arbidol 17%) have relatively close interest rates in monetary expression and they are in strictly competition, therefore, the leader in monetary expression is the Kagocel (23%). The study also revealed the rates of the sale of antiviral medicines with natural expression. The research showed that, like monetary expression, in this category we also have strictly competition (Anapheron 25%, Oxolin ointment 25%, Kagocel 20%) and the leader in natural expression is the Anapheron and Oxolin ointment with small difference Kagocel is in second place. The data obtained in Armenia was quite similar to the data from a survey conducted in Russia, where Kagocel is also the leader of the antiviral medicine's market [13]. Summarizing and observing all the data, it can be

noticed that the Kagocel was quite popular among the antiviral medicines available in the pharmacy, and as a best-selling drug was considered to be the leader in monetary expression. Pharmaceutical organizations can be advised to expand the range of antiviral medicines, adjust the pricing policy, making it more profitable and affordable for the consumer, to conduct more detailed consultations and information for the pharmacy employees. A favorable factor for stimulating sales and increasing the share of sales of antiviral medicines will be the introduction of various discounts and campaigns that make medicines more accessible to the population, competently use advertising and the basics of merchandising in pharmacies.

Conclusion

Based on these results, it can be concluded that drug information resources in community pharmacies in RA have to be improved, more attention should be paid to official sources of information during training of pharmacy workers. Apparently, there is a need for information about available sources of information and all pharmacies should have material resources for basic drug information. Among the antiviral medicines used for the treatment and prevention of influenza and acute respiratory viral infections the leader with monetary expression is Kagocel (23 %) and the leader with natural expression is Anapheron and Oxolin ointment (25%), with a little difference Kagocel (20%).

The OTC antiviral drugs market is not highly competitive and consists of several major players as found. In terms of market share, few drugs currently dominate the market. However, mid-size and smaller companies can increase their market share by introducing new marketing programs, pricing policy, relevant information provided to pharmacy employees.

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Figure 1. Antiviral medicines available in pharmacy.

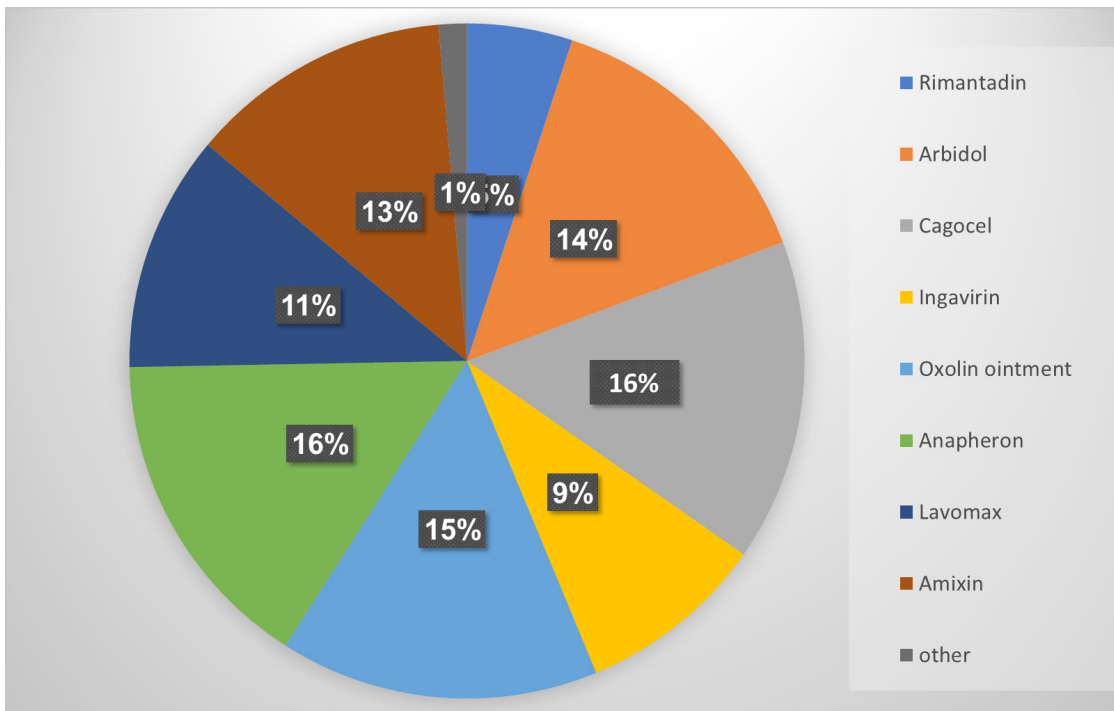


Figure 2. The main sources for obtaining information about antiviral medicines.

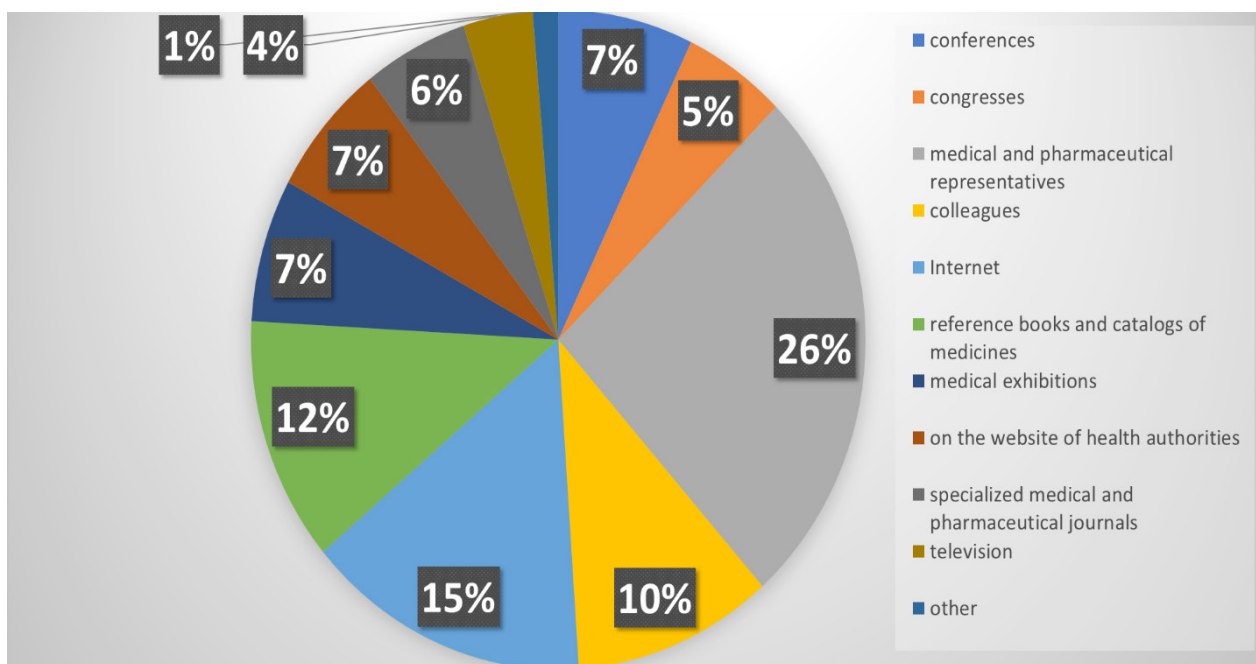


Figure 3. *The rates of the sale of antiviral medicines with monetary expression.*

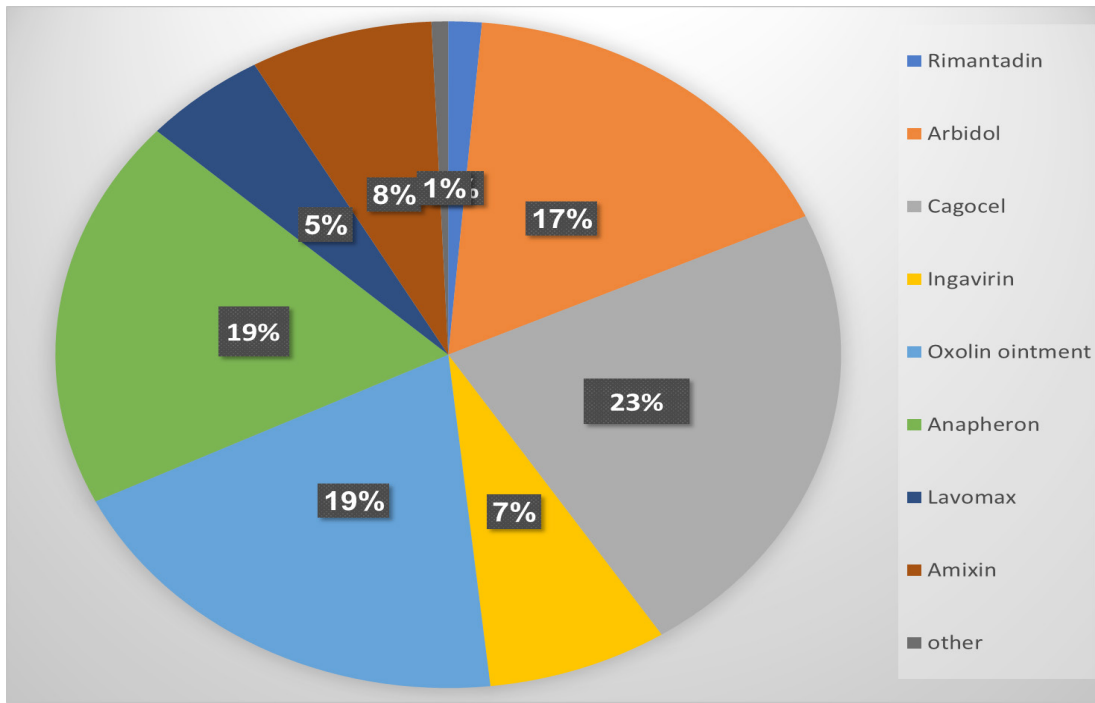


Figure 4. *The rates of the sale of antiviral medicines with natural expression.*

