

ORIGINAL ARTICLE

MARKETING AUDIT OF UKRAINIAN PHARMACEUTICAL MARKET FOR LOCAL TREATMENT ACNE AND DEMODICOSIS

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ABSTRACT**The aim:** To conduct a marketing audit of the pharmaceutical market of Ukraine for acne and demodicosis medications.**Materials and methods:** The study used marketing methods of analysis, survey, observation methods and reference literature – State Register of Medicines of Ukraine of the State Expert Center of the Ministry of Health of Ukraine.**Results:** As a result of marketing audit of retail audit data of pharmacy sales revealed that the leading sales in packaging is MNL benzylbenzoate, the share of which reached in different years from 45% to 32%, which was 1380902 and 647576 packages per year, respectively, in second place – metronidazole, benzoyl peroxide, zinc ointment and sulfur ointment respectively.**Conclusions:** According to our analysis, it has been found that the highest sales volume (in packs) are of the low-cost brands, which are the most economically available and have the most effective therapeutic effect. Therefore, it is important to create multicomponent soft drugs in the form of cream and gel based on metronidazole, benzyl benzoate and benzoyl peroxide.**KEY WORDS:** sales dynamics, local therapy, acne, demodicosis, cream, gel, ointment

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INTRODUCTION

Acne (*acne*), demodicosis, rosacea, perioral dermatitis, belonging to a special group of skin diseases, psychosomatic dermatoses, is a polymorphic multifactorial disease of the sebaceous glands. The term «acne» emphasizes the chronic, often recurrent course of dermatosis, the complexity of its etiopathogenesis, and the need for a comprehensive approach to the treatment of the disease [1-3]. Currently, the incidence of acne and demodicosis not only has no tendency to decrease, but also significantly increases. According to the scientific organization of the European Dermatological Forum, the disease of demodicosis can go into acne. Given the localization of rashes on the face in almost all patients, there is no doubt that acne and demodicosis have an effect on their psycho-emotional state [4-6]. Thus, the pronounced impact of the disease on the psycho-emotional sphere and social adaptation of patients determine the urgency of this problem and the need to develop new effective treatments. In this regard, the development of drugs for local therapy of this disease is an urgent medical and pharmaceutical task.

THE AIM

The aim of this study was to conduct a marketing audit of the Ukrainian pharmaceutical market for the treatment of dermatological diseases such as acne and demodicosis and to identify whether there are registered multicomponent drugs and the level of realization of which active pharmaceutical ingredients are most in demand.

MATERIALS AND METHODS

In order to evaluate the prospect of developing new drugs for local acne therapy and demodicosis, we conducted a study to investigate existing demand and consumer trends in the soft drug segment of the relevant area. The study used marketing methods of analysis and reference literature – State Register of Medicines of Ukraine of the State Expert Center of the Ministry of Health of Ukraine, survey and observation methods, as well as retrospective analysis of the retail audit of the pharmaceutical market of Ukraine for the last 10 years by international non-patented names (INN) drugs and medicines audit for the treatment of dermatological diseases, in particular acne and demodicosis according to ICD 10.

RESULTS AND DISCUSSION

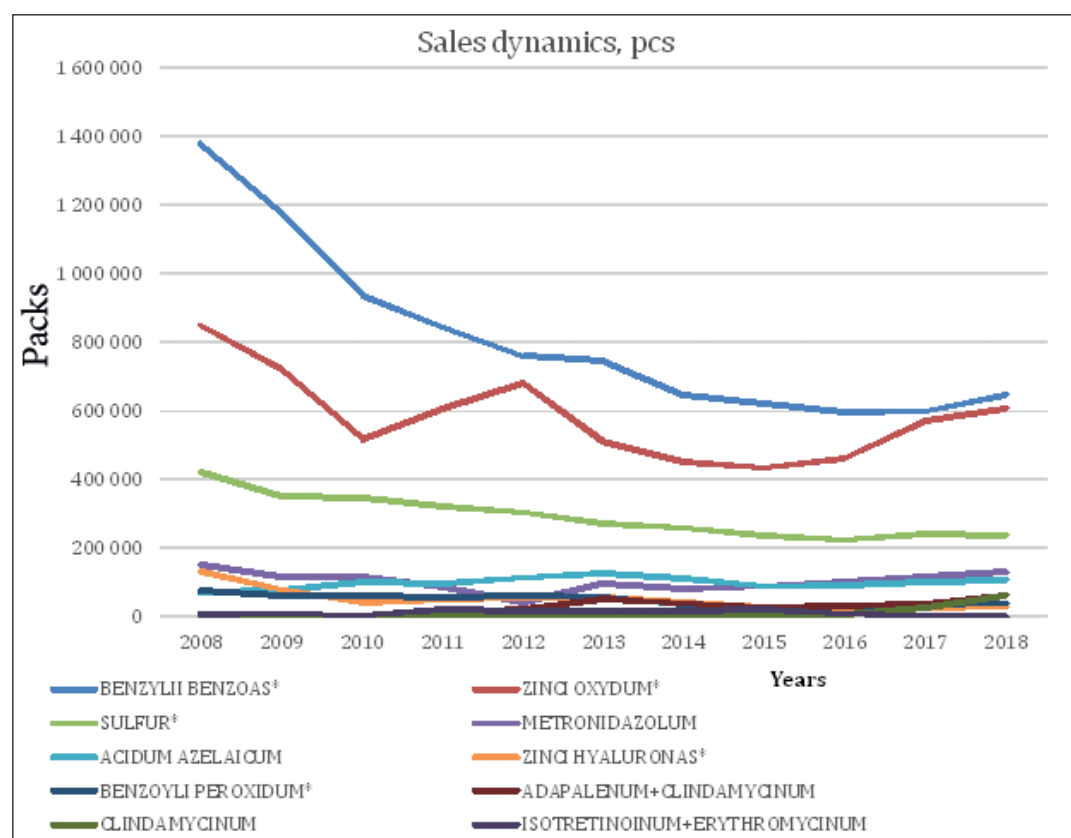
The analysis was aimed at studying the drugs in the domestic pharmaceutical market by groups P03A, D06BX, D10AD, D10A, D06A, D02A according to the anatomical-therapeutic chemical classification (ATC).

Medicinal products for the treatment of acne and demodicosis according to ATC-classification are shown in Table. I

According to the table. 1 for the treatment of acne and demodicosis apply 6 groups of drugs (on ATC), of which 2 – (P03A, D06BX), acting on ectoparasites, including scabies, antimicrobials and 4 groups (D10AD, D10A, D06A, D02A) medicines – retinoids for topical treatment of acne, antibiotics for topical use, drugs with softening and protective effects.

Table 1. ATC classification of drugs for the treatment of acne and demodicosis

ATC code 3-4 level	ATC code 5 level	Commercial name	API
1	2	3	4
P03A – Means acting on ectoparasites, including scabies	P03AX01 - Benzyl benzoate P03AC04 - Permethrin	Benzyl benzoate Permethrin Permethrin ointment Permin	Benzyl benzoate Permethrin
D06BX - Antimicrobials other	D06BX01 -Metronidazole	Metrogyl Rosamet	Metronidazole
D10AD - Retinoids for local acne treatment	D10AD04 - Isotretinoin	Derivia water Deriv C MS	Adapalene Micronized clindamycin
D10A – Local remedies for acne treatment	D10AX - Other medicines for local acne treatment	Acne stoppe Curiozin Skinoren	Azelaic acid Zinc is hyaluronate Azelaic acid
D10A – Local remedies for acne treatment	D10AE01 - Benzoyl peroxide	Ugresol	Benzoyl peroxide
D10A – Local remedies for acne treatment	D10AB02 - Sulfur	Simple Sulfur Ointment	Sulfur
D10A – Local remedies for acne treatment	D10AF - Antimicrobial medicines for the treatment of acne	Duak Zerkalin Zinerit	Benzoyl peroxide + clindamycin Clindamycin erythromycin, zinc acetate
D06A - Antibiotics for local use	D06AX01 - Fusidium acid	Fuziderms Fuzykutan	Fusidium acid
D02A-Preparations with softening and protective action	D02AB - Zinc preparations	Zinc ointment Sudokrem	Zinc is oxide benzyl benzoate, zinc oxide, benzyl cinnamate, benzyl alcohol

**Fig. 1.** Dynamics of pharmacy sales of local medicines for the treatment of acne and demodicosis of the medicines groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

Data analysis Fig. 1 showed that the market share of the relevant INN can be observed, with regard to consumer preferences remain quite stable for a long time, we see

a small increase in the market share of zinc ointment (D02AB), metronidazole (D06BX01) and clindamycin (D10A), which however does not change the list and

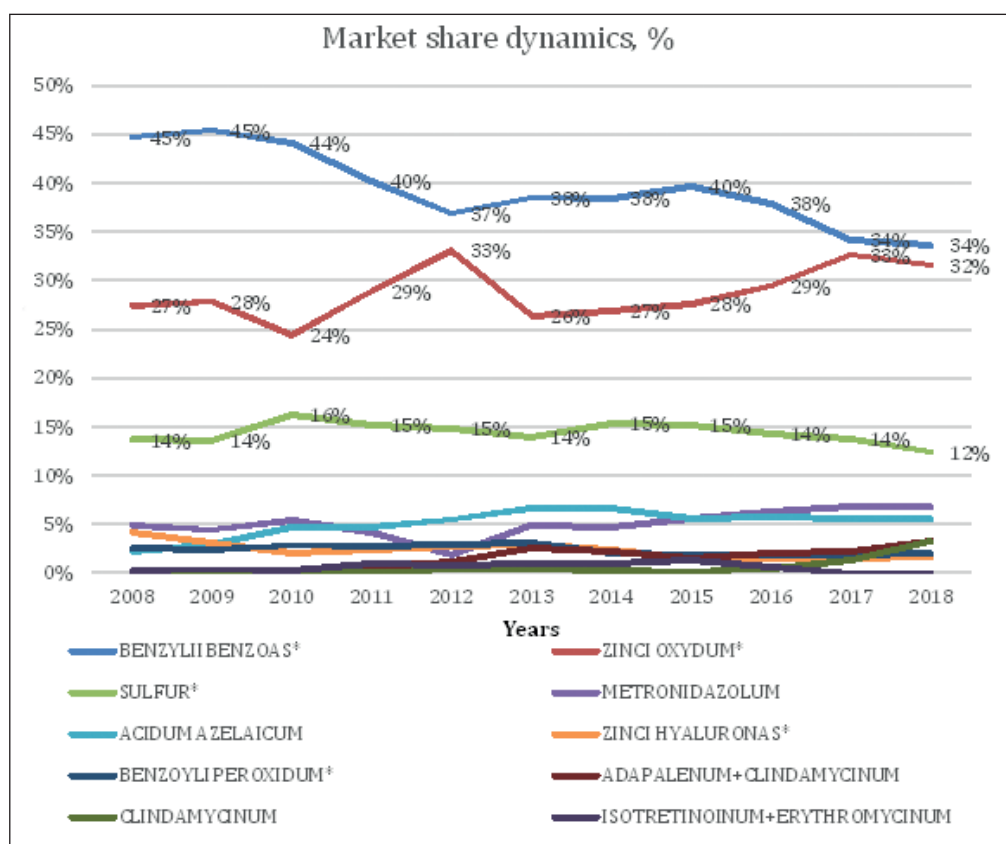


Fig. 2. Dynamics of Local Pharmaceutical Sales (LZ) Market Share for Acne and Demodicosis treatment of medicines groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

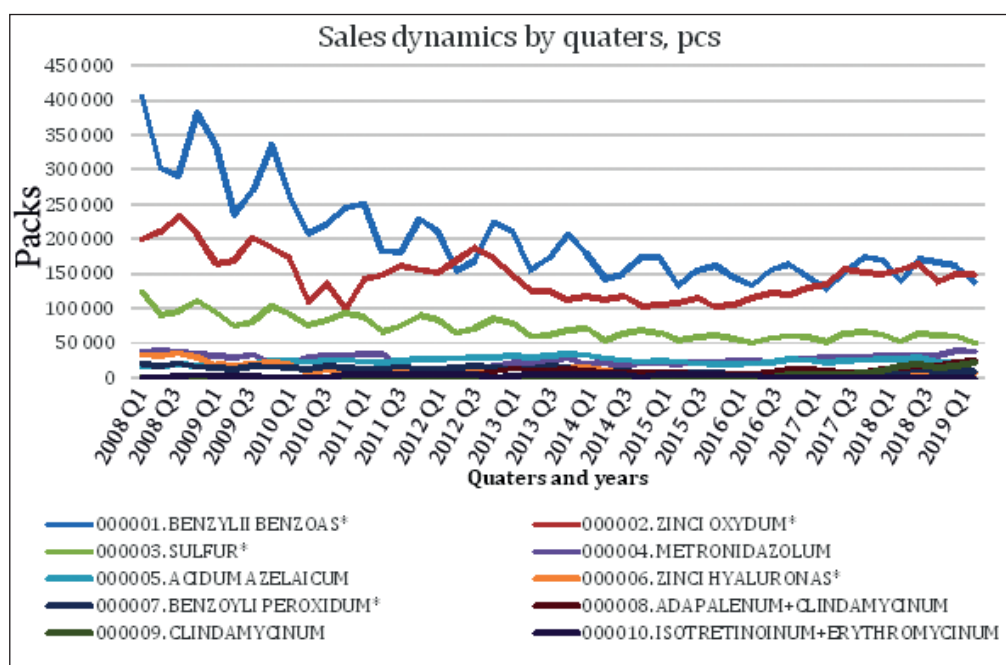


Fig. 3. Dynamics of pharmacy sales quarterly, local medicines for the treatment of acne and demodicosis of the medicines groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

popularity segment leaders. In order to develop hypotheses about the reasons for such distribution and the sustainability of consumer preferences and the influence of various factors on this, we conducted a thorough analysis of sales (Fig. 2).

Data analysis Fig. 2 showed that quarterly sales dynamics were evaluated to test the market seasonality hypothesis. Benzylbenzoate-based preparations (P03AX01) and sulfur (D10AB02) have some third-quarter sales

growth and a decline in the second. Zinc formulations (D02AB) show a multidirectional trend in different years, but preferably also a slight increase in Q3. Other international non-branded name do not show pronounced seasonal dynamics. The reasons for such differences for different international non-branded name may be the following: on small sales, seasonal differences are less noticeable; additional indications that these international non-branded name are used – for example, zinc ointment

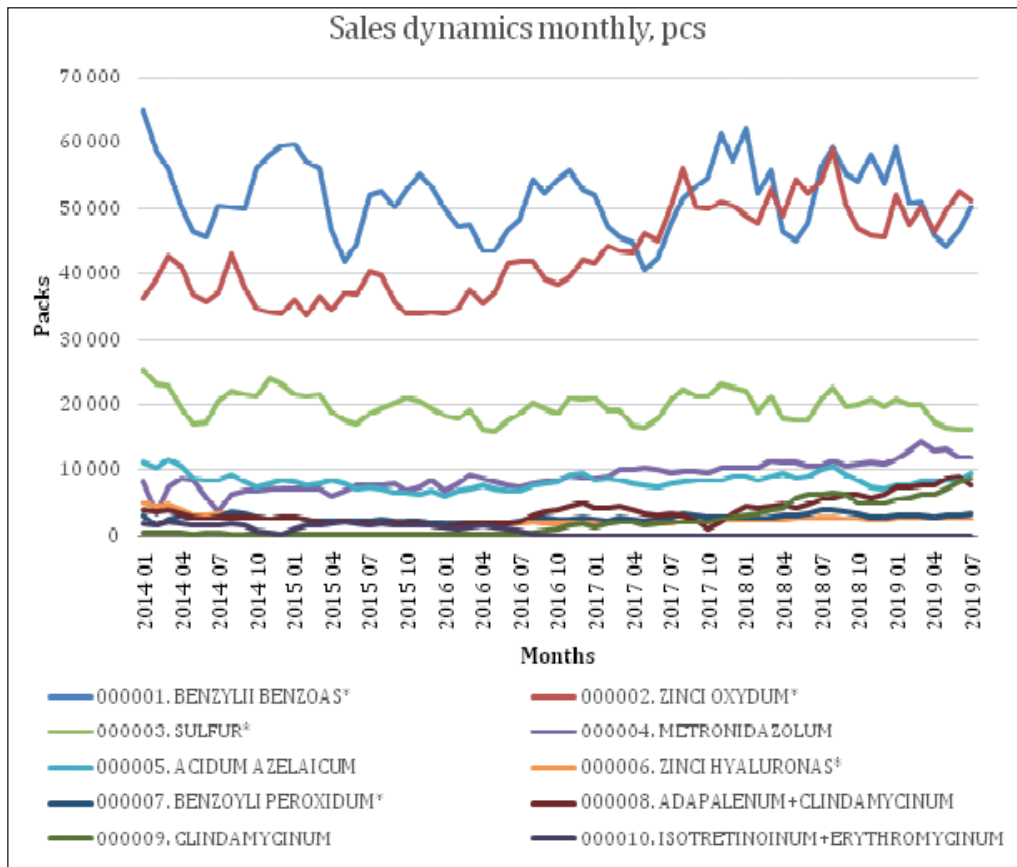


Fig. 4. Dynamics of pharmacy monthly sales of local medicines for the treatment of acne and demodicosis of drug groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

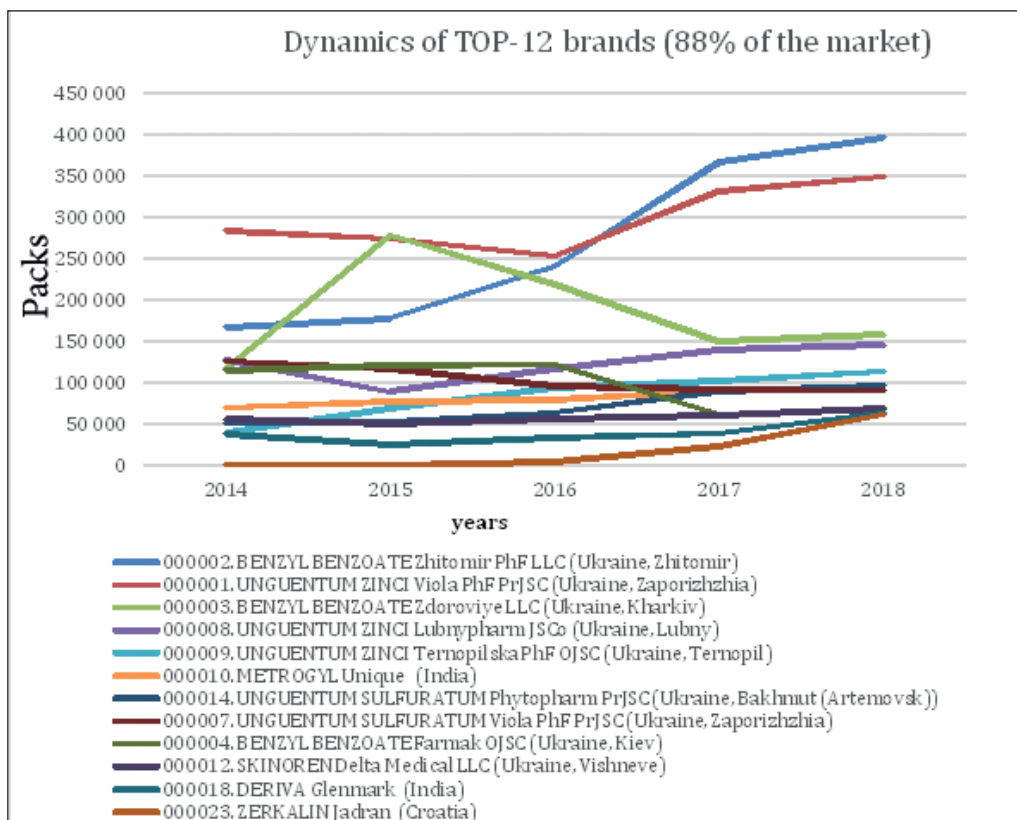


Fig. 5. Dynamics of the Top 12 Local Medicinal Products (LZ) Brands for Acne and Demodicosis of medicines groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

(D02AB), in addition to acne and demodicosis, are also used to treat diaper dermatitis and rashes in infants where seasonality is not expressed and sulfur (D10AB02)

and benzyl benzoate (P03AX01) have in scabies, which is more common in autumn and winter. But if you look at the seasonality of acne (mainly autumn and winter)

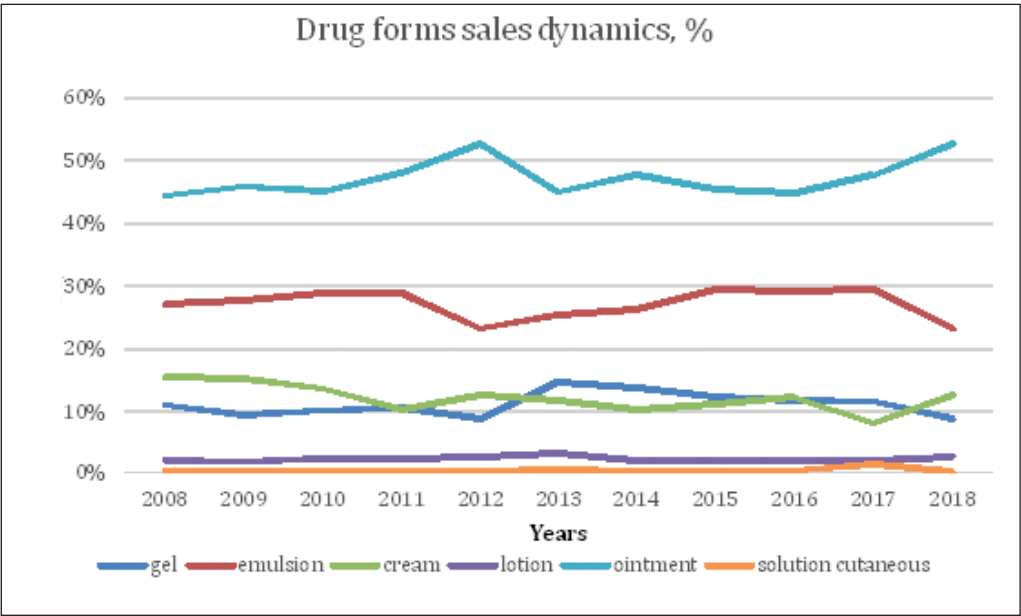


Fig. 6. Proportion of various dosage forms in the topical segment for the treatment of acne and demodicosis of the medicines groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A)

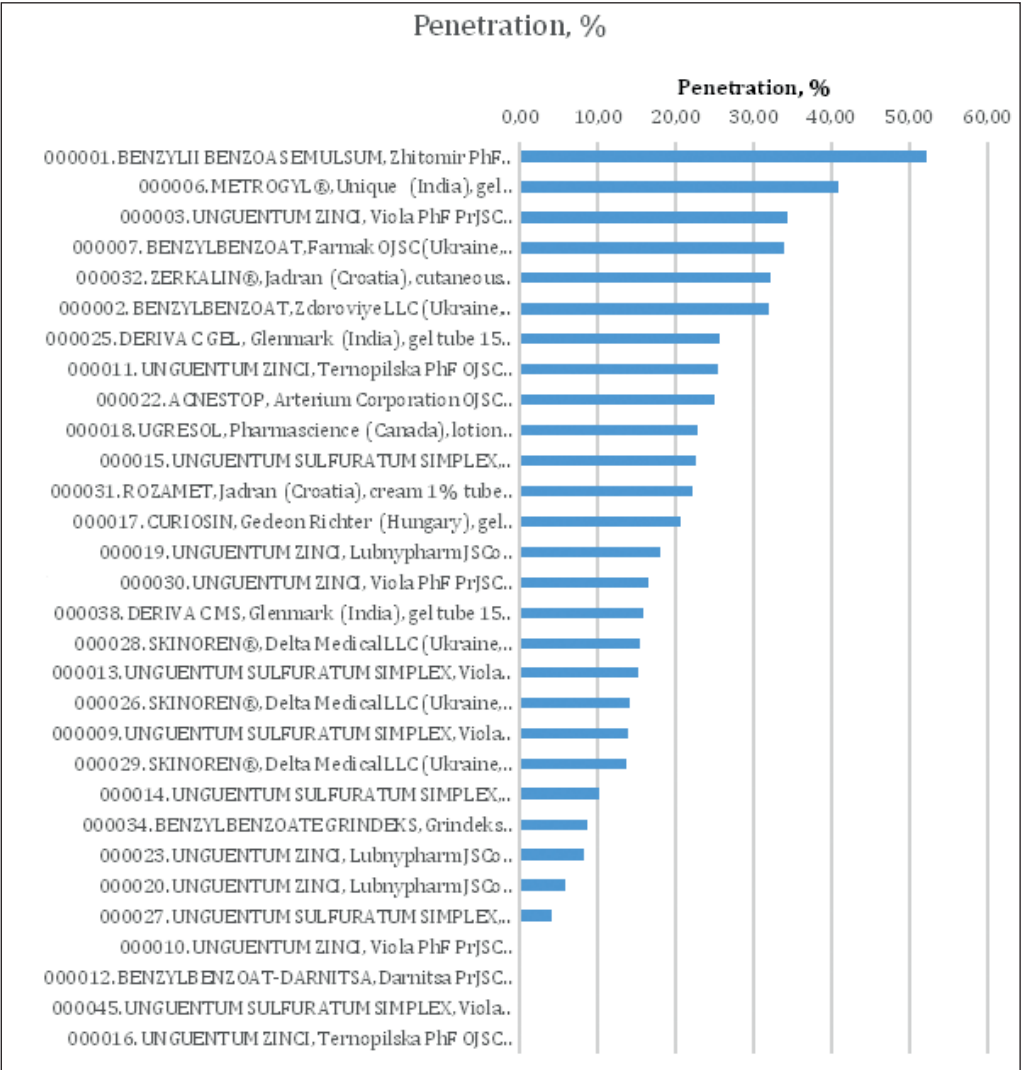


Fig. 7. Penetration of sales

and demodicosis (bursts from May to September), we will notice that the seasonal fluctuations in sales of the 3 most popular international non-branded name just cover these periods.

According to Fig. 3, the monthly breakdown of sales showed an upward trend in the groups (P03A, D06BX) and (D10AD, D10A, D06A, D02A), starting in May and the marked growth of the groups (P03AX01) and (D10AB02) in the autumn.

Figure 4 presents the monthly dynamics of sales in packages.

An assessment of the dynamics of individual brands (Fig. 4) found that 88% of the market (in packaging) is occupied by sales of 12 brands. There have been some changes among benzyl benzoate (P03AX01), sulfur (D10AB02) and zinc (D02AB) based products from different manufacturers – some manufacturers have ceded to other positions. Thus, among benzylbenzoate (P03AX01) preparations, the benzylbenzoate emulsion produced by ZPP Pharmaceutical Factory LLC, Zhytomyr, which is today the leader in the segment as a whole and the best-selling brand among benzylbenzoates, has also grown. production of JSC Pharmaceutical factory «Viola» and JSC Lubnifarm, sulfur ointment (D10AB02) of production of JSC «Phytopharm» and others[6, 7].

The next stage of our research was (Fig. 5) conducting an analysis of the popularity of various dosage forms in the segment of external agents used to treat acne and demodicosis. The dynamics of sales in packaging and the proportion of each dosage form in the segment were evaluated. It is proved that the most common forms are ointment and emulsion – this correlates with the leading drugs in packaging sales. Thus, in the form of ointments are primarily zinc (D02AB) and sulfur ointment (D10AB02), and in the form of emulsions – benzyl benzoate (P03AX01), which in some manufacturers is also in the form of cream. Ointments occupy about half of the segment in packages (45-50%), emulsions – 23-29% in different years[6, 7, 8].

Forms of cream and gel occupy about 10-13% each and are represented by preparations based on metronidazole (D06BX01), benzoyl peroxide (D10AE01) and the like. Liquid dosage forms (lotions, solutions) occupy the smallest proportion of the segment (in packs).

In the studied market segment (data for July 2019), benzylbenzoate (P03AX01), Zhytomyr CFC – 52.35%, Metrogil (Unic Pharmaceutical Laboratories) – 40.99%, Zinc Ointment (PJSC Pharmaceutical Factory) have the highest prevalence – 34.5%, Benzylbenzoate (Pharmak JSC) – 34.09%, Zerkalin (JSC «Jadran» Galenskaya laboratory etc.) – 32.22%, Benzylbenzoate («Pharmaceutical company» Health) – 32.18%. These drugs the patient can find in every 2-3 pharmacies. Other drugs are presented only in every fourth pharmacy and less frequently.

It is proved that a high penetration rate does not always correlate with a higher rate of sales in packages (Fig. 7). It can be influenced by various factors – price, age and brand awareness, the drug is prescribed mainly by a doctor or the patient chooses it independently or on the recommendation of a pharmacist directly in the pharmacy, the presence of active promotion of manufacturers, the availability of their own brands of pharmacies and other features of distribution. and more[8].

The next indicator is the number of retail outlets (out of the total number of pharmacies in Ukraine) that sold the drug at least once a month (data for July 2019). The highest percentages are found to be in high demand – benzylbenzoate and zinc ointment from various manufacturers. Almost every fourth pharmacy sells metrogil monthly (almost

the only form of metronidazole for external use on the market) and Zerkalin. Compared to the sales of TOP-12 brands in the segment, it is proved that these funds either have consistently high sales figures or their sales have been increasing in recent years. The drugs at the bottom of the list are predominantly negative sales dynamics or belong to a higher-end segment or are predominantly prescribed by specialist dermatological venereologists, and thus are sold predominantly at pharmacies near their respective health care facilities.

CONCLUSIONS

1. As a result of marketing audit of retail audit data of pharmacy sales revealed that the leading sales in packaging is MNL benzylbenzoate, the share of which reached in different years from 45% to 32%, which was 1380902 and 647576 packages per year, respectively, in second place – metronidazole, benzoyl peroxide, zinc ointment and sulfur ointment respectively.
2. As a result of our marketing audit of the domestic pharmaceutical market for Group D drugs, we have found that the range of medicines for topical acne and demodicosis therapy is mainly mono-component drugs.
3. According to our analysis, it has been found that the highest sales volume (in packs) are of the low-cost brands, which are the most economically available and have the most effective therapeutic effect. Therefore, it is important to create multicomponent soft drugs in the form of cream and gel based on metronidazole, benzyl benzoate and benzoyl peroxide.

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Conflict of interest:

Authors declare no conflict of interest.

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