



Study of the preferences of doctors and pharmacists regarding medicines for the treatment of diseases of the peripheral nervous system

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A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of the article

The aim of the work is to assess the preferences of doctors and pharmaceutical workers regarding drugs for the treatment of diseases of the peripheral nervous system in order to optimize the medical supply of the population.

Materials and methods. Data from the State Register of Medicines of Ukraine, Compendium-online, questionnaires of neurologists and pharmaceutical workers were used in this research. The search systematic, analytical, qualimetric, comparative, statistical analyses were used in the work.

Results. The results of a survey of neurologists revealed that for the treatment of diseases of the peripheral nervous system (radiculopathy, radiculargia) the most effective treatment regimen is that, which includes “Nucleo CMF Forte”, “Celtican” and “Mielofan”. The effectiveness and safety of the studied drugs were confirmed by qualimetric analysis. However, the results of consumer surveys showed that the latter prefer a treatment regimen that contains “Dicloberl”, “Ketanov” and “Dexalgin”. These drugs are the most irrational in terms of side effects and contraindications. For consumers, the importance of the pharmacological effect outweighs the effects on the body from the side effects of drugs.

Conclusions. The study of the preferences of doctors and pharmacists regarding medicines for the treatment of radiculopathy and radiculargia was conducted. The most rational treatment regimens are identified, the effectiveness of which is confirmed by the method of qualitative analysis.

Key words: diseases of the peripheral nervous system, treatment regimens, drugs, pharmacists, doctors.

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Дослідження уподобань лікарів і фармацевтичних працівників щодо лікарських засобів для лікування захворювань периферичної нервової системи

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Мета роботи – оцінювання уподобань лікарів і фармацевтичних працівників щодо лікарських засобів для лікування захворювань периферичної нервової системи для оптимізації лікарського забезпечення населення.

Матеріали та методи. Для здійснення аналізу використали відомості Державного реєстру лікарських засобів, Компендіум-онлайн та анкет лікарів-неврологів, фармацевтичних працівників. Під час роботи застосували методи систематичного, аналітичного, кваліметричного, порівняльного та статистичного аналізу.

Результати. Результати анкетування лікарів-неврологів дали змогу встановити, що для лікування захворювань периферичної нервової системи (радикулопатії, радикуларгії) найефективнішою є схема лікування, що передбачає призначення Нуклео ЦМФ форте, Келтікану та Мієлофану. Ефективність і безпеку досліджуваних лікарських засобів підтверджено методом кваліметричного аналізу. Втім, результати анкетування фармацевтичних працівників показали, що споживачі віддають перевагу схемі лікування, яка включає Диклоберл, Кетанов і Дексалгін. Ці лікарські засоби – найбільш нераціональні в аспекті побічних впливів і протипоказань. Для споживачів важливість фармакологічного ефекту превалює над наслідками для організму від побічних дій ліків.

Висновки. Здійснили дослідження уподобань лікарів і фармацевтичних працівників щодо лікарських засобів для терапії радикулопатій і радикуларгій. Визначили найбільш раціональні схеми лікування, ефективність яких підтверджена методом кваліметричного аналізу.

Ключові слова: хвороби периферичної нервової системи, схеми лікування, лікарські засоби, фармацевтичні працівники, лікарі.

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Key words: diseases of the peripheral nervous system, treatment regimens, drugs, pharmacists, doctors.

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Neurological manifestations of osteochondrosis account for 60 % to 70 % of all diseases of the peripheral nervous system, and vertebrogenic radiculopathies account for 8 % to 10 % of other complications of osteochondrosis of the spine. Most often, people of working age (from 30 to 60 years) suffer from back pain. This disease has a tendency to prolonged course with repeated relapses, which often lead not only to temporary but also permanent disability [1].

Age is a primary risk factor, as it occurs secondary to the degenerative process within the spinal column. Symptoms typically begin in midlife, with men often affected in the 40s while women are affected in the 50s and 60s [2,3]. Females have a higher risk in certain populations, with physically demanding careers such as service in the military. In the general population, there is a male preponderance. Degenerative spondyloarthropathies are the primary cause of lumbar radiculopathy [4]. Patients commonly present with back pain that is associated with their radiculopathy. By definition, radiculopathy describes pain that radiates down the legs and is often described by patients as electric, burning, or sharp. The most common underlying cause of radiculopathy is irritation of a particular nerve, which can occur at any point along the nerve itself and is most often a result of a compressive force. In the case of lumbar radiculopathy, this compressive force may occur within the thecal sac, as the nerve root exits the thecal sac within the lateral recess, as the nerve root traverses the neural foramina or even after the nerve root as exited the foramina. It may be related to disc bulging or herniation, facet or ligamentous hypertrophy, spondylolisthesis, or even neoplastic and infectious processes. The diagnosis of the causative agent and subsequent treatment starts with a thorough physical exam [5].

Traditional therapy is mainly aimed at eliminating the symptoms of the disease and therefore is not always effective. Overloading of the pharmaceutical market, along with the growth of pathologies, makes it urgent to find the most optimal treatment, where trust in the drug must be reasonable and unquestionable. Pathogenetic therapy has significant advantages, especially if it has a multifactorial effect, which reduces the likelihood of side effects along with increased effectiveness [6]. Currently, a small number of active components are available that act at the level of peripheral nerves and promote their physiological regeneration [7].

Aim

The aim of the work is to assess the preferences of doctors and pharmaceutical workers regarding drugs for the treatment of diseases of the peripheral nervous system in order to optimize the medical supply of the population.

Materials and methods

Data from the State Register of Medicines of Ukraine, Compendium-online, questionnaires of neurologists and pharmaceutical workers were used in this research. The search systematic, analytical, qualimetric, comparative, statistical analyses were used in the work [8,9].

The following data from patients with this pathology were used in this study: sex, age of the patient, diagnosis, duration of treatment, patients' opinion regarding the results of the treatment of drugs included in the proposed treatment regimens.

To study the opinion of pharmacists with this pathology on the effectiveness of drugs included in these treatment regimens, a questionnaire was proposed, which contains the following questions: age, sex, lifestyle, frequency of visits to a neurologist for this pathology, evaluation of drug efficacy of the proposed treatment regimens.

The quality indicators of products and services can be expressed in different units. In qualimetric analysis for evaluation, we select the form of release, routes of administration, range of indications (typical for all analogues +1 point, additional +2 points), contraindications (characteristic 0 points, specific -1 point), side effect (characteristic 0 points, specific -1 point), the predominant features). Measurements of individual properties of medicinal products were calculated using the relative quality index (K_{ij}) according to the formula:

$$K_{ij} = f(P_{ij}, P_{ij}^{bases}), \quad (1)$$

where P_{ij}^{bases} – the basic indicator of comparative quality assessments [10–12].

Results

To conduct a survey of neurologists of public and private medical institutions of Zaporizhzhia and Dnipropetrovsk regions to assess the effectiveness of the studied drugs, a questionnaire was developed, which included the following treatment regimens: the first – drugs that restore the myelin sheath: “Mielofan” (Sintal Dietetics S.r.l., Italy), “Nucleo CMF Forte”, “Keltican” (Ferrer Internacional S.A., Spain); to the second – myelorelaxants: “Tizalud” (PJSC “Kyiv Vitamin Plant”, Ukraine), “Midokalm” (Gedeon Richter, Hungary), “Muskomed” (Mefar Ilac San. A.S., Turkey.); to the third – nonsteroidal drugs: “Ketanov” (S.C. Terapia S.A, Romania), “Dikloberl”, “Dexalgin” Berlin-Chemie, GmbH, Germany).

As can be seen from *Table 1*, the treatment regimens for radiculalgia and radiculopathy included the following drugs:

- Scheme 1 (drugs to restore the myelin sheath): “Nucleo CMF Forte” (code ATC – N07X X19**), “Keltican” (code ATC – N07X X19**) and biological additive “Mielofan”;
- Scheme 2 (muscle relaxants): “Muskomed” (code ATC – M03B X05), “Mydocalm” (code ATC – M03B X04) and “Tizalud” (code ATC – M03B X02);
- Scheme 3 (nonsteroidal anti-inflammatory and anti-rheumatic drugs): “Dikloberl” (code ATC – M01A B05), “Ketanov” (code ATC – M01A B15) and “Dexalgin” (code ATC – M01A E17) [6,7].

One of the components of product competitiveness on the market is its quality and product compliance with consumer requirements, which should be considered as a set of properties capable of satisfying consumer needs for their purpose [10].

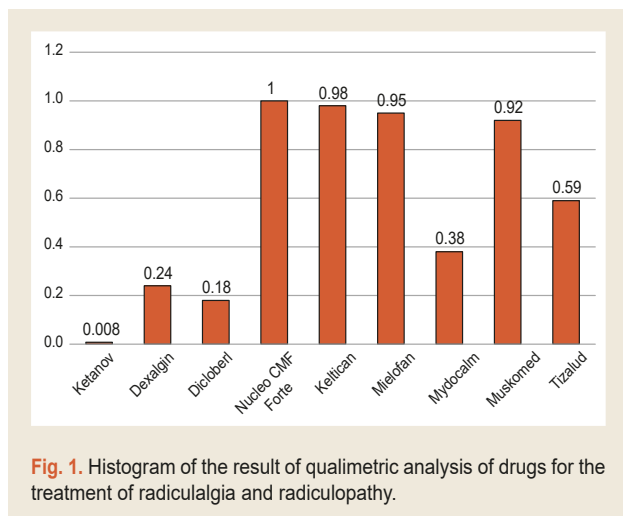


Fig. 1. Histogram of the result of qualimetric analysis of drugs for the treatment of radiculalgia and radiculopathy.

One of the solutions to the tasks of assessing the level of product quality is a comparison of various possible variants of the proposed products.

Qualimetric analysis was used to determine the (efficiency and rationality) competitiveness of drugs of this action. It shows the evaluation of the quality of medicines using a scale of points. Qualimetric characterization was performed on the basis of the generalization of data on the clinical use of drugs. The obtained results of qualimetric analysis are presented in a histogram (Fig. 1).

Discussion

According to Table 1, when prescribing drug therapy according to scheme 1, doctors prefer “Nucleo CMF Forte” (43.2 %) and its analog “Keltican” (40.8 %). Pharmacists confirm the high efficiency and relative safety of “Nucleo CMF Forte” (71.0 %). In this case, according to the results of qualimetric analysis, all of the above drugs are quite effective and safe ($K_{ij} = 0.98–1.00$) (Fig. 1). When using drugs for the treatment of pathology of the peripheral nervous system, included in scheme 2, doctors determine the effectiveness of “Mydocalm” (43.8 %) and “Muskomed” (40.2 %). Pharmacists believe that the most effective in this scheme is “Mydocalm” (71.0 %). The results of qualimetric analysis showed that only “Muskomed”, which is preferred by only 17.0 % of patients, is relatively effective and safe ($K_{ij} = 0.92$). “Mydocalm” in the presence of a large number of contraindications and side effects can be attributed to a highly toxic drug ($K_{ij} = 0.38$).

According to the results of qualimetric analysis, drugs included in the third scheme of treatment of radiculopathies and radiculalgia are ineffective and highly toxic. This primarily applies to “Ketanov” ($K_{ij} = 0.08$). However, 56.0 % of patients use this drug, although only 18.5 % of neurologists prescribe it, preferring “Dicloberl” (42.0 %) and “Dexalgin” (39.5 %). At the same time, from the point of view of pharmaceutical workers patients prefer the latter – 19.0 % and 25.0 %, respectively, i. e. for patients, the importance of the pharmacological effect outweighs the consequences for the body from the side effects of drugs.

Table 1. Data on the preferences of physicians and pharmacists regarding drugs for the treatment of diseases of the peripheral nervous system

Medicines	Results		
	Survey of neurologists, %	Survey of pharmacists, %	Coefficient qualimetric assessment (K_{ij})
Scheme 1			
“Nucleo CMF Forte”	43.2	71.0	1
“Keltican”	40.8	17.0	0.98
“Mielofan”	16.0	12.0	0.95
Scheme 2			
“Mydocalm”	43.8	71.0	0.38
“Muskomed”	40.2	17.0	0.92
“Tizalud”	16.0	12.0	0.59
Scheme 3			
“Ketanov”	18.5	56.0	0.08
“Dexalgin”	39.5	25.0	0.24
“Dicloberl”	42.0	19.0	0.18

Conclusions

1. A study of the preferences of doctors and pharmaceutical workers regarding medicinal products for the treatment of radiculopathy and radiculalgia was conducted.

2. The preferences of doctors and pharmaceutical workers regarding the proposed treatment regimens for the specified pathologies have been established.

3. The most effective and safe drugs for the treatment of these diseases have been identified by the method of qualimetric analysis.

4. Prospects for further research are aimed at the analysis of the market of drugs for the restoration of the myelin sheath as a promising group for the treatment of pathologies of the peripheral nervous system.

Conflicts of interest: authors have no conflict of interest to declare.

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