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Study of problematic aspects of homeopathic medicinal products compounding in the pharmacies

Исследование проблемных аспектов изготовления гомеопатических лекарственных средств в условиях аптек

Abstract

This article presents the results of study of problematic aspects of the organization of homeopathic medicinal products (HoMP) compounding in the pharmacies by studying the distribution of the formulation during the working day. Significant fluctuations in its index have been determined for extemporaneous compounding of HoMP according to individual prescriptions and for intrapharmacy compounding according to frequent prescriptions. It was found that within these conditions, the workload on the employees of homeopathic pharmacies (departments) also varies a lot, making it difficult to use common approaches to logistics and staffing of the production function of homeopathic pharmacies (departments) depending on the time expenditures for individual production processes. The lines of the further researches for the justification of production processes standardization have been established in order to eliminate the identified problematic aspects of HoMP compounding in the homeopathic pharmacies (departments).

Keywords: homeopathic pharmacies (departments), homeopathic medicinal products, production function, formulation, standardization.

Резюме

В настоящем сообщении представлены результаты исследования проблемных аспектов организации изготовления гомеопатических лекарственных средств (ГолС) в условиях аптек путем изучения распределения рецептуры в течении рабочего дня. Определены значительные колебания ее показателя на экстенпоральное приготовление ГолС по индивидуальным прописям и на внутриаптечную заготовку по часто повторяющимся прописям. Установлено, что при таких условиях нагрузки на работников гомеопатических аптек (отделов) также широко колеблются, что усложняет применение единых подходов к материально-техническому и кадровому обеспечению производственной функции гомеопатических аптек (отделов) в зависимости от затрат времени на отдельные производственные процессы. Для устранения

выявленных проблемных аспектов изготовления ГолС в условиях гомеопатических аптек (отделов) определены направления дальнейших исследований по обоснованию стандартизации производственных процессов.

Ключевые слова: гомеопатические аптеки (отделы), гомеопатические лекарственные средства, производственная функция, рецептура, стандартизация.

■ INTRODUCTION

The current state of pharmaceutical companies operation, the increase of the quality requirements to medical provision of the population, the introduction of Good Pharmacy Practice (GPP), changes in the system of pharmacy specialists training make the study of production processes necessary in order to improve the division of pharmacy specialists, to find ways to improve the medicinal products compounding in the pharmacies. This is directly related to the homeopathic pharmacies (departments) engaged in the productive activity under license [1–3].

Our studies have confirmed the advisability of homeopathic medicinal products (HoMP) compounding in the pharmacies, including extemporaneous ones according to individual prescriptions and intrapharmacy compounding according to frequent prescriptions. It has been also found that the population has positive attitude towards them, and there is a need to expand HoMP compounding in the specialized homeopathic pharmacies and in the existing general pharmacies, eligible for production activities under license [4–8].

■ STUDY PURPOSES

To study the problematic aspects of the organization of HoMP compounding in the homeopathic pharmacies (departments), their influence on the logistics and staffing of the production function.

■ MATERIALS AND METHODS

The object of the study is the production activity of specialized homeopathic pharmacies (departments) of a number of regional centres of Ukraine: the city of Kyiv, Odesa, Poltava, Kharkiv, Chernihiv.

The subject of the study is the formulation for HoMP (more than 30 thousand formulas), that came to homeopathic pharmacies (departments) during 2015–2016 according to individual prescriptions for extemporaneous compounding and according to frequent prescriptions for intrapharmacy compounding. For ease of the study, pharmacies (departments) have been grouped into 6 groups by symbols A, B, C, D, E, F, which are used as relevant references in the article.

During the research, data processing and evaluation of the representativeness the modern scientific methods have been used: comparison, logical, analytical, analytical and descriptive, mathematical and statistical, sample survey, study and immediate surveys, followed by the results processing, including the use of modern computer programmes (STATISTICA. V.6; PSPPD) [9–11].

• RESULTS AND DISCUSSION

It has been established that the prescriptions distribution fluctuates during a quarter, a month, a day to HoMP for extemporaneous compounding according to individual prescriptions and for intrapharmacy compounding. The abovementioned information is presented graphically using the example of the homeopathic pharmacies of conventional group E (Fig. 1).

Figure 1 shows that during a month there are fluctuations in the formulation distribution for individual prescriptions of HoMP within each week and by each working day. Thus, during the first week the daily fluctuations in the number of prescriptions range from 1.0 to 30.0 ($\bar{x}=13,3$); during the second week they range from 3.0 to 55.0 ($\bar{x}=29,9$); during the third one – from 17.0 to 28.0 ($\bar{x}=22,4$); during the week – from 5.0 to 30.0 ($\bar{x}=19,1$).

Further researches confirm fluctuations in the formulation distribution for HoMP of pharmacy compounding during one day in the homeopathic pharmacies (departments) in all conventional groups (Fig. 2).

Figure 2 shows that daily fluctuations in the number of prescriptions for HoMP of pharmacy compounding are different in the homeopathic pharmacies (departments), and they are within the certain limits: the number

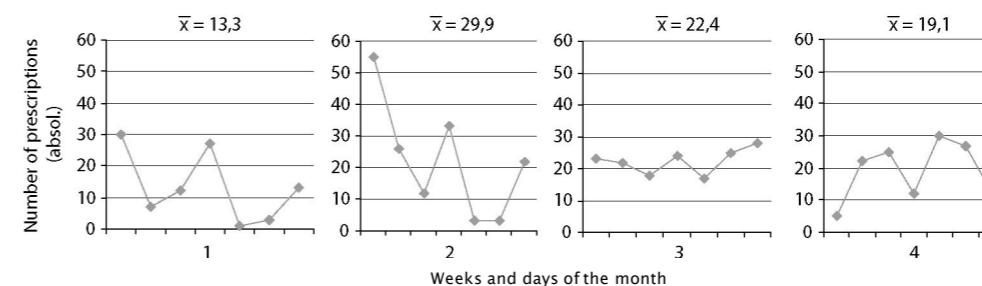


Fig. 1. Fluctuation of the formulation distribution to individual prescriptions of HoMP during a month in the homeopathic pharmacies from the group

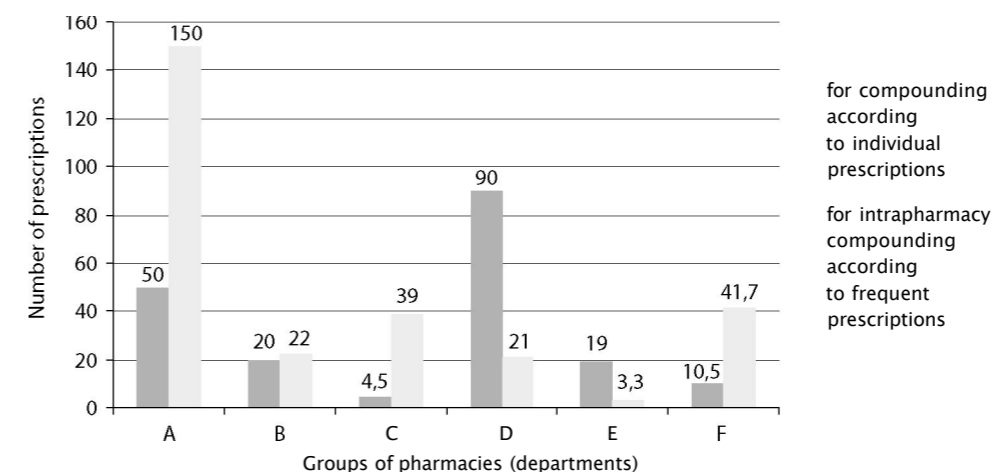


Fig. 2. Daily formulation distribution for HoMP compounding in the homeopathic pharmacies (departments)

of prescriptions for compounding according to the individual prescriptions, from 90.0 (Group D) to 4.5 (group C) prescriptions; for intrapharmacy compounding according to the frequent prescriptions, from 150.0 (group A) to 3.3 (group E) prescriptions. According to these conditions, the ratio of prescriptions for HoMP compounding according to individual prescriptions and for intrapharmacy compounding according to frequent prescriptions is equal to, respectively, 41.0% and 58.9% (Fig. 3).

It should be mentioned that distribution fluctuations in the prescriptions for HoMP of pharmacy compounding during the day in the homeopathic pharmacies (departments) are influenced by factors of objective and subjective origin. We included visits of the population to homeopaths and subsequent visits with prescription for HoMP to homeopathic pharmacy (department) to the objective factors. These visits of the population are not permanent and occur only in the event of illness or its specific symptoms. In addition, homeopaths and physicians, who use homeopathic treatments, have a daily schedule of visitors, which differs every week. As the subjective factors we have identified the insufficient organization of HoMP compounding in the homeopathic pharmacies (departments), which is mostly associated with subjective load allocation among pharmaceutical specialists (chemists, pharmacists) and support staff. Mentioned is caused by a lack of scientific justification of the standardization of the production processes for HoMP of pharmacy compounding taking into account the complexity of different dosage forms and staff time on them. Hereafter, in order to confirm this conclusion, we have continued the research of the load on employees of homeopathic pharmacies (departments) according to the number of prescriptions (Fig. 4).

Figure 4 shows that the load during a day per an employee of the homeopathic pharmacies (departments) is different by the number of prescriptions for extemporaneous compounding according to individual prescriptions and for intrapharmacy compounding according to frequent prescriptions. Thus, in the conventional group A it constitutes, respectively, 7.1 and 21.5 prescriptions; in group B – 3.3 and 3.7 prescriptions; in group C – 0.8 and 6.5 prescriptions; in group D – 12.5 and 3.0 prescriptions; in group E – 9.5 and 1.7 prescriptions; in group F – 10.5 and 2.8 prescriptions. In general, fluctuations in the number of prescriptions per employee of homeopathic pharmacies, respectively, ranges from $\bar{x}_{min}=0.8$ (group C) to $\bar{x}_{max}=12.9$ (group D), and from $\bar{x}_{min}=1.7$ (group E) to $\bar{x}_{max}=21.5$ (group A). According to these conditions, av-

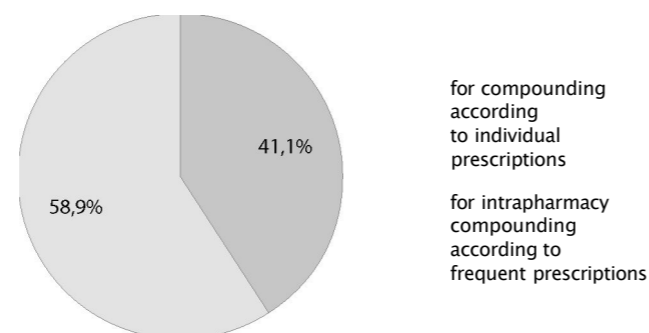


Fig. 3. Ratio between the number of prescriptions for HoMP compounding in the homeopathic pharmacies (departments) during a day

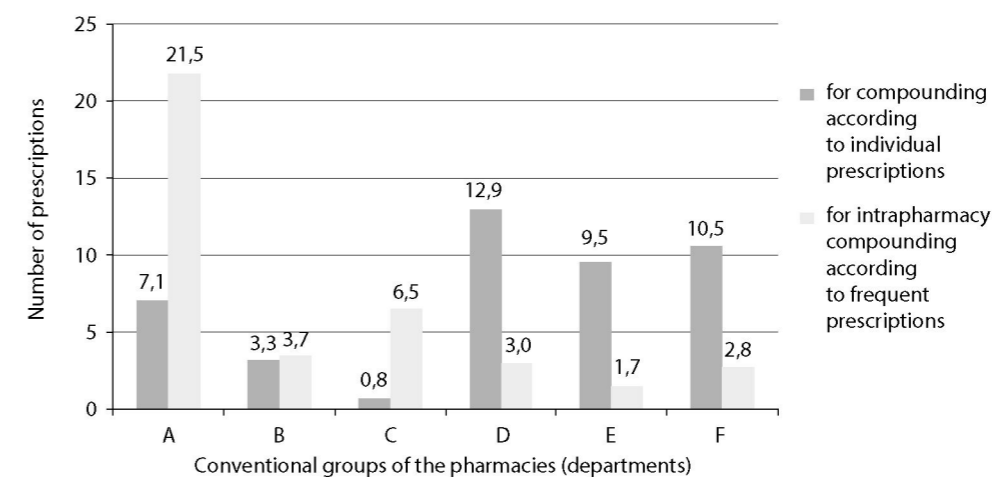


Fig. 4. Averages of the prescriptions number per employee of the homeopathic pharmacies (departments) during a day

erages of the ratio of prescriptions per employee are equal to: 53.2% (for compounding according to individual prescriptions) and 46.8% (for intrapharmacy compounding according to frequent prescriptions) (Fig. 5).

To sum up, there is no regularity in the fluctuations; this fact confirms the conclusion of the need for standardization of the production processes of pharmaceutical compounding of HoMP.

Consequently, the results of the study of problematic aspects of HoMP compounding in the homeopathic pharmacies (departments) suggest the need for further justification of the load of pharmacy specialists engaged in HoMP compounding, as well as planning and staffing. It is important both for active homeopathic pharmacies (departments) with a production function and for pharmacies planning to create this function, because only in this case it will be possible to plan accurately the staffing requirements basing on the number of prescriptions for HoMP. In addition, it is important to solve the problematic aspect of the logistics of pharmaceutical compounding of HoMP under the current license. Common methodological approaches are also required, they should base on the standardization of production

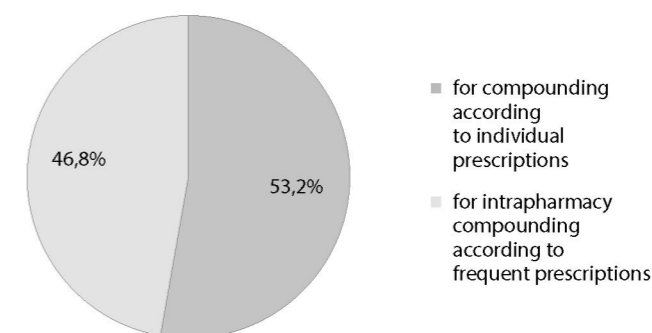


Fig. 5. Ratio between the number of prescriptions for HoMP compounding per employee of homeopathic pharmacies (departments) during a day

processes of pharmaceutical compounding of HoMP, including extemporaneous one according to individual prescriptions and intrapharmacy compounding according to frequent prescriptions. The abovementioned information is the subject for our further researches.

■ CONCLUSIONS

1. Significant fluctuations in formulation of homeopathic medicinal products during a working day, both for individual prescriptions of extemporaneous compounding and for intrapharmacy compounding according to frequent prescriptions, are among the problematic aspects of the compounding of homeopathic medicinal products in the pharmacies. It is important to mention there are these fluctuations in formulation of HoMP in the studied homeopathic pharmacies (departments) of all conventional six groups (A, B, C, D, E, F).
2. It has been proved that the distribution fluctuations in the prescriptions for HoMP during a working day are influenced by factors of objective and subjective origin. One of the main factors is insufficient organization of HoMP compounding in the homeopathic pharmacies (departments), which is mostly associated with the lack of scientific justification of the standardization of the production processes. Common approaches to the load are required according to the number of prescriptions per employees, who compound HoMP in the homeopathic pharmacies (departments). The abovementioned information will also increase the efficacy of logistics in terms of finding out the number of workplaces and their equipping, depending on the time expenditures for individual production processes.

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