

PHARMACOLOGY INFORMATION

The Slovak Drug Information (Druginfo) Centre during the period 1997–2004

Wawruch M, Bozekova L, Tisonova J, Raganova A, Lassanova M, Hudec R, Vojtko R, Gazova A, Kriska M

Department of Pharmacology, Faculty of Medicine, Comenius University, Bratislava,

Abstract

Objectives: The aim of the presented study was to evaluate the profile of users, the number and character of questions which were received during the period May 1997–December 2004.

Background: The drug information centre (Druginfo) has been established in Slovak Republic at the Department of Pharmacology in May 1997. Since 2002 Druginfo is a member of International Register of Drug Information Services of the Society of Hospital Pharmacists of Australia. Druginfo provides voluntarily free of charge drug information for healthcare professionals.

Method: Druginfo receives questions addressed via phone, fax and e-mail. The questions were replied by consulting pharmacologists on duty. The data for this study were obtained from records which include list the received questions and the basic information about the questioners.

Results: The Druginfo received 495 questions during the period May 1997–December 2004. Questions were mostly from hospital physicians, followed by outpatient physicians and employees of the Faculty of Medicine. The most frequent specializations of the asking physicians were internal medicine, gynaecology-obstetrics, clinical pharmacology and general medicine. The most common topic was basic information about drugs, followed by questions concerning the use of drugs in pregnancy and lactation. According to the ATC classification the questions were most often related to antiinfective drugs, cardiovascular drugs and psychiatric drugs.

Conclusion: The existence of Druginfo in Slovak Republic represents a possibility of an open access to independent drug information. (Fig. 3, Ref. 11.)

Key words: drug information centre, independent drug information, specialization, ATC classification.

The increasing amount of medical knowledge, especially that concerning information about new drugs and about the position of new and old drugs in the rational pharmacotherapy, stresses the need for providing professional drug information. The first drug information centres started to work in 1960s in the U.S.A., in 1970s and at the beginning of 1980s in Great Britain, Sweden and other European countries (1, 2). According to the conception of the World Health Organization the availability of independent drug information is one of the basic conditions of the state drug policy. The WHO recommended the member states to establish drug information centres. Also the European Union emphasizes the importance of the existence of independent drug information centres in all member states (3, 4).

Drug Information Centre (Druginfo) has been established with the support of Ministry of Health at the Department of Phar-

macology, Faculty of Medicine, Comenius University in Slovak Republic in May 1997. Since 2002 Druginfo is a member of the International Register of Drug Information Services of SHPA (Society of Hospital Pharmacists of Australia). The Druginfo provides charge free information for health care professionals: physicians, pharmacists and students of medicine or pharmacy.

The increasing use of electronic information sources enables to provide drug information also in this form (by e-mail). For-

Department of Pharmacology, Faculty of Medicine, Comenius University, Bratislava, Slovakia

Address for correspondence: M. Wawruch, MD, PhD, Dept of Pharmacology, Faculty of Medicine, Comenius University, Sasinkova 4, SK-811 08 Bratislava 1, Slovakia.

Phone: +421.2.59357510, Fax: +421.2.59357508

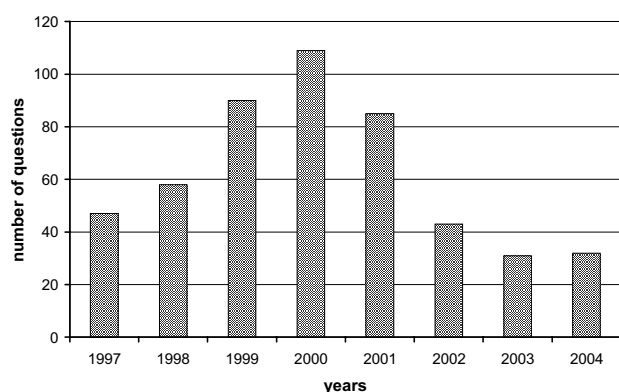


Fig. 1. The total number of recorded questions.

eign Druginfos have good experience with electronic systems (5). Since October 2004 the Slovak Druginfo is working besides the classical ways of Druginfo communication parallelly on the webside *www.zdravcentra.sk*.

The aim of the presented study was to evaluate the profile of users, the number and character of questions which were received during the period May 1997–December 2004.

Material and methods

Druginfo receives questions phone, fax and e-mail. All questions are documented in a record. The questions are replied by pharmacologists on duty. They have the possibility to consult more difficult questions with experts in clinical pharmacology at the Department of Pharmacology or with specialists from other institutions (e.g. Department of Pharmacology and Toxicology of Faculty of Pharmacy, Institute of Preventive and Clinical Medicine etc).

The information sources journals, monographs, domestic or foreign textbooks and especially electronic databases are (Micro-medex, PubMed, AISLP, DRUGLINE, OBD). The answers are regularly discussed in working teams during seminars at the Department of Pharmacology (6).

According to emergency the question can be answered by phone within an hour or sent by mail in a written form within maximum seven days. This type of answer includes the statement and explanation based on cited relevant literature sources. It is also possible to send an answer by e-mail especially in case when the question was delivered by e-mail.

We obtained the data for the presented study from the records where the received questions and the basic information about the questioner (name, surname, titles, specialization, affiliation, the requested type of answer by phone or in written form) were recorded.

We analysed the number of questions accepted during the period of May 1997–December 2004 and evaluated the number of questions received per months. We assorted the questions according to the workplace (hospital, outpatient office, Faculty of Medicine); the specialization of the questioner (internal medicine, clinical pharmacology, general medicine, gynecology-obstetrics, pediatrics, etc); the character of questions (basic information, adverse drug reaction, prescription approval, the use of drugs during pregnancy and lactation, the use in pediatrics, mechanism of drug action, pharmacokinetics, etc); the Anatomic Therapeutic Chemical Classification (ATC) of asked drugs; the form reply (by phone, in written form).

Results

Druginfo received total 495 questions during the period of May 1997–December 2004. The highest interest for Druginfo

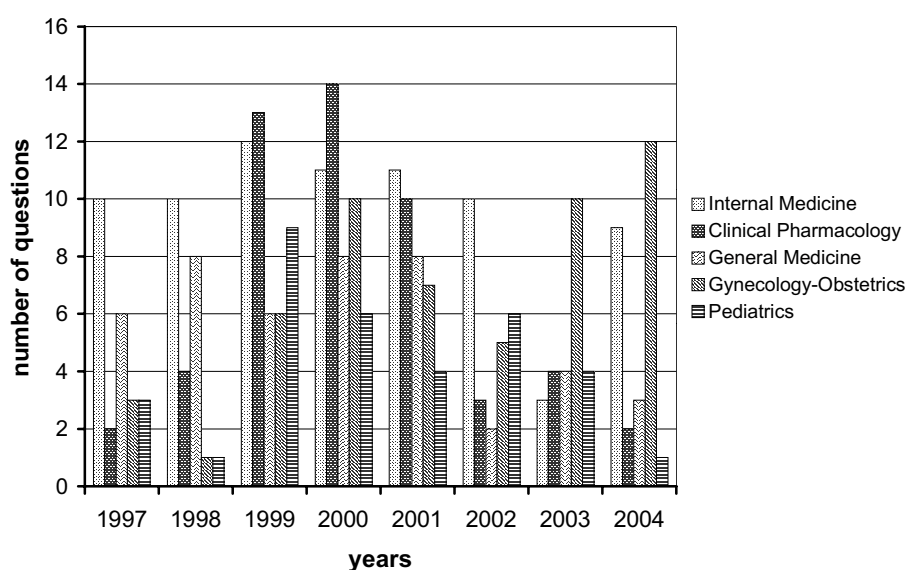


Fig. 2. The five most common specializations of asking physicians.

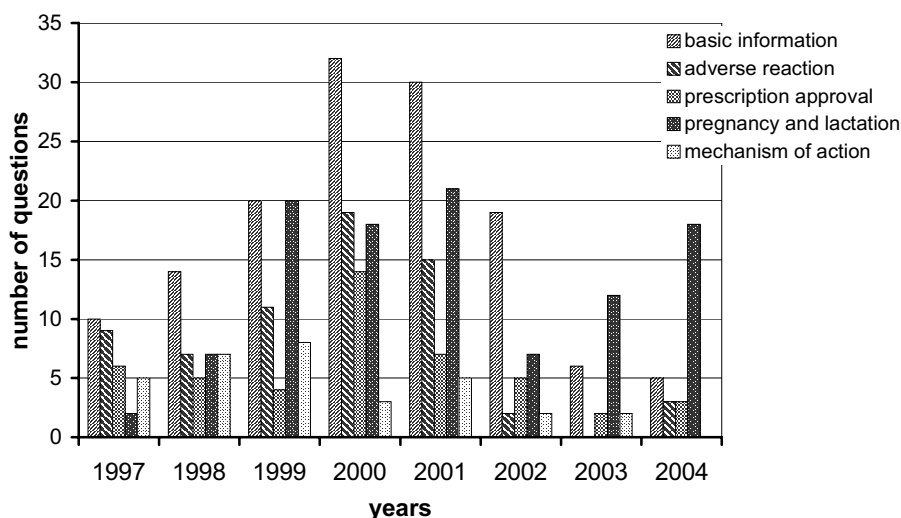


Fig. 3. The five most common topics of questions.

answers connecting was observed during the years 1999–2001 (90; 109; 85 questions). In last three years there was decreasing trend of the interest for drug information provided by Druginfo (43; 31; 32 questions) (Figure 1). According to the distribution of questions per year, most of them were given to Druginfo in February (n=61), May (n=58), September (n=47), October (n=39) and November (n=44). Most of questions came from hospital physicians (n=256), followed by outpatient physicians (n=89) and employees of the Faculty of Medicine (n=84).

The five most common specialization of questioners were: internal medicine (n=76), gynecology-obstetrics (n=54), clinical pharmacology (n=52), general medicine (n=45) and pediatrics (n=34). Figure 2 shows an increase in the number of questions coming from gynecologists-obstetricians and a decreasing proportion of those coming from clinical pharmacologists during the last two years.

The five most common topics of questions were the basic information about drugs (n=136), followed by questions concerning the use of drugs in pregnancy and lactation (n=105), questions about adverse drug reactions (n=66), questions about prescription approval of drugs (n=46) and questions about the mechanism of action (n=32). In the last two years a decreased proportion of questions concerning the basic information and an increased proportion of questions concerning the use of drug in pregnancy and lactation can be observed. In the period from May 1997 to December 2002 the basic drug information presented the main topic of the questions (Fig. 3).

According to the ATC classification the questions concerned mostly the following five groups: antiinfective drugs (n=124), cardiovascular drugs (n=106), drugs of central nervous system (n=97), drugs used in treatment of gastrointestinal diseases (n=76) and drugs of muscle-skeletal system. The questions were answered mostly in a written form (n=279).

Discussion

The system of work in our Druginfo is similar to that of other centres in foreign countries with many year a experience (7, 8). The decreasing tendency in the number of questions in last three years was considered a negative trend, which can be related to numerous factors: e.g. increased availability of free electronic information sources, decreased interest caused by lack of time and overburdening of physician with administrative work. Also some lethargy could be felt in the difficult period of transformation of Slovak healthcare system.

The majority of questioners represented hospital physicians. This group often needs detailed drug information. On the other hand, in some hospitals physicians have the opportunity to consult the local departments of clinical pharmacology. The increased number of hospital physicians was due to questions about the drug use during pregnancy and lactation. This topic was one of the most requested.

A relative small number of asking outpatient physicians could be explained by improved availability of electronic information sources in outpatient practice in last years. We assume that it is very necessary to stimulate the interest for drug information especially in above mentioned group of physicians because they often treat elderly patients with multidrug therapy. These patients need a careful evaluation of the risk benefit ratio of each prescribed drug. In this group there is a high risk of manifestation of adverse drug reactions and drug interactions. Therefore we consider a relative small number of questions coming from outpatient physicians as an unfavourable marker.

The most requested topic of questions was the basic information about drugs. This fact indicates the relatively low level of information support in our health care system. The decreased proportion of these questions during the last two years was a positive trend. It is a result of a better ability of health care

providers to use electronic information systems including electronic databases (e.g. AISLP) and Internet sources. The study of Gajdosik et al, which was carried out in 2000, found out the physicians preference for information given by pharmaceutical industry. Relatively less were used electronical sources such as Internet and AISLP. Also a minority of respondents used the information service of Druginfo (9).

The most frequent topics of questions in foreign Druginfos were adverse drug events, administration of drugs during pregnancy and pharmacokinetics (7, 8, 10). According to the study of Schjott et al physicians found the drug information provided by Druginfo to be of high quality and the answers on their questions had impact on their clinical practice (11).

The use of drugs during pregnancy and lactation is the second most important topic of the asked questions. The main reason of this fact is the interest of gynecologists-obstetricians in a possible embryonic or fetal toxic potential of drugs when a drug was administered to pregnant woman who did not know about her pregnancy status. Increasing number of pathological pregnancies will strengthen the need of support from clinical pharmacology.

The monthly distribution of the number of questions could be explained by the fact that in January the Department of Pharmacology organizes a seminar "Medicamenta Nova" which takes place at the Faculty of Medicine of Comenius University. Here Druginfo is presented to a large audience of physicians and pharmacists. The influence of the Slovak Medical Society Congress which usually takes place in April is reflected in the increased number of questions during May. The congress regularly includes the section of clinical pharmacology which is organised by the Department of Pharmacology. The large number of questions during the autumn months is probably caused by the effect of Druginfo presenting activities at the conferences such as the Conference of Clinical Pharmacology, congresses in Internal Medicine which take place during autumn months. These findings support the necessity of presentation of Druginfo work.

Another possibility how to improve the interest for independent drug information was the establishment of Druginfo on the website in October 2004. This could be a good alternative in time of increased use of electronic communication in health care system.

Druginfo provides independent drug information in Slovak medical and pharmaceutical community. The existence of Druginfo in Slovak Republic is very important for an open access to

independent drug information. The decreased interest for drug information in last three years shows the need of advertising the Druginfo activity. The result of this analysis is a challenge not only for the employers of Druginfo but also for the health care authorities. It is necessary to increase the interest of health care providers for independent drug information. This endeavour requires not only enthusiastic work of Druginfo consultants but also financial support for advertisement of Druginfo and also for obtaining extensive but expensive drug databases.

References

1. **Alvan G, Ohman B, Sjoqvist F.** Problem-oriented drug information: a clinical pharmacological service. *Lancet* 1983; 2: 1410–1412.
2. **Davies DM, Ashton CH, Rao JG et al.** Comprehensive clinical drug information service: first year's experience. *Brit Med J* 1977; 1: 89–90.
3. **Rodriguez C, Arnau JM, Vidal X et al.** Therapeutic consultation: a necessary adjunct to independent drug drug information. *Guidelines for developing national policies. Brit J Clin Pharmacol* 1993; 35: 46–50.
4. **WHO Working Group on Clinical Pharmacology in Europe:** an indispensable part of the health service. *Europ J Clin Pharmacol* 1988; 33: 535–539.
5. **Dugas M, Weinzierl S, Pecar A et al.** Design and implementation of a common drug information database for a university hospital. *Pharm World Sci* 2003; 25 (4): 156–161.
6. **Lassanova M, Tisonova J, Bozekova L, Kriska M.** Drug Information Center. *Bratisl Lek Listy* 2001; 102 (6): 305–306.
7. **Ohman B, Lyrvall H, Tornqvist E et al.** Clinical pharmacology and the provision of drug information. *Europ J Clin Pharmacol* 1992; 42: 563–568.
8. **Schwarz UI, Stoelben S, Ebert U et al.** Regional drug information service. *Int J Clin Pharmacol* 1999; 37: 263–268.
9. **Gajdosik J, Kriska M, Lietava J.** The finding of sources of drug information in medical practice. *Konzilium* 2001; 2: 12–15.
10. **Troger U, Meyer FP.** The regional drug-therapy consultation that has been serving patients and physician alike 30 years in Magdeburg. *Europ J Clin Pharmacol* 2000; 55: 707–711.
11. **Schjott J, Pomp E, Gedde-Dahl A.** Quality and impact of problem-oriented drug information: a method to change clinical practice among physicians? *Europ J Clin Pharmacol* 2002; 57: 897–902.

Received Januar 31, 2005.
Accepted Februar 20, 2005.