Mashhad Drug And Poison Information Center:

Annual Report 2008

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Summary

The Mashhad Drug and poison Information Center (MDPIC) was established in 1996 to provide up-to-date information on medications. The main aim is to report the activities carried out by the MDPIC in 2008. From 1st January to 31st december 2008, all questions and inquires about drugs and rare poisoning cases received by MDPIC were retrieved from its database for analysis. A total of 3790 cases were analysed. Overall 60% of the cases were between 20 and 49 years old. It was about 35.64% male and 35.64% female. Public made 81.42% of calls and

18.75% related to professional health cares. The most frequent questions were about therapeutic uses of drugs (30.67%) and adverse drug reaction (24.76%). Substances most frequently asked were Anti infections (31.05%) and corticosteroids (17.48%). The rate of toxicity cases was about 1.5% and for drug information was 98%. This report shows updated epidemiological evaluation on drug information in Mashhad. Since there is not any other similar report, this can provide important information on the trend of drug usage and may guide further strategies in giving proper information to public and health centers.

Key words: annual report, drug information center, poison information center.

Introduction

Since the beginning of twentieth century there was a great development in medications and new drugs. Inadequate awareness about new drugs and poisons and huge volume of information that is not easily accessible for everyone, resulting in an extra burden for the health care providers in determining their dosages, uses, adverse effects and other medication-related issues. For these reasons, poison control and drug information centers were established with the primary goal of providing information to those in urgent need of such information (1).

The first poison information centers were established in Chicago in 1953 in order to progress patient care (2). Their main goal was to provide product information to health care professionals. With the same objective, the Iran Ministry of Health established the Mashhad Drug Information Center in 1996 (3). Its initial function include collection of drug and poison information and advices in Mashhad. In order to avoid unnecessary referrals to health care centers and hospitalizations, collecting epidemiological data and giving information to people, were performed.

Before the establishment of the Mashhad Drug and poison Information Center (MDPIC), there was not any other formal centers to be consulted and people usually called the state drugstores and asked their questions without any documentation.

During these years (1996-2008) the MDPIC has conducted both academic and non-academic activities. The Center introduced the concept of poison prevention weeks in Mashhad and has conducted two so far. The MDPIC has several publications in the fields of toxicology, rational

drug use, complementary and herbal therapy, drug information pharmacoepidemiology, and self-medication in the form of pamphlets, brochures, booklets and posters. Documentation of all enquiries is mandatory for analysis, evaluation, comparative purposes and quality assurance. The annual report aimed to document all telephone consultations.

Methods

Mashhad drug and poison information center (MDPIC) is one of the poison and drug centers in Iran that serves both the general public and health care facilities 6 hours a day. Three pharmacist employed in this center under supervision of a PhD toxicologist as staff, who was involved in consultations too.

From 1st January to 31st december 2008, all calls received by MDPIC were retrieved from its database for analysis. The consultations were free of charge. All consultation data are recorded in a comprehensive structured form by the information officers of MDPIC. Most recorded cases come from self-reported calls. The consultation includes drug data (type of drug, dose, time, place and reason of exposure), antidotes, advice on first aid, referral to emergency department or community physician and other specific treatments. Each case is classified according to kind of request: drug overview, therapeutic uses, adverse drug reaction, dosage, drug-drug interaction, usage in pregnancy, lactation and etc.

Like other poison centers worldwide, this center takes call from all doctors, nurses and pharmacists and the general public and health care professionals. The center benefits from more specialists, whom are board certified in different areas of internal medicine, pediatrics, psychology, cardiovascular, and clinical toxicology as on-call. Information sources include various computerized databases which the main source was Thomson-Micromedex and updated every six month. The reasons of call, age and gender distribution and type of exposure were asked and written in separate forms. Data were subjected to descriptive analysis.

Results

A total of 3790 cases were recorded at the MDPIC during 1387. All of them were consultations. Table 1 depicts the various callers. The percentage of calls from patients was about 49.55%, patient's relatives 31.87%, pharmacists 10.66%, hospital physicians 6.07% and 1.85% for other

health staff. Table 2 and 3 presents the age and gender distribution of patients: 31.89% in 18-30 years old, 23% in 30-40 years old, 20.22% in 40-60 years old, 8.65% in > 60 years old, 7.86% in 2-12 years old, 6% of cases in age 0-2 years old, 2.39% in 12-18 years old. The percentage of callers' gender was 64.36% for female and 35.64% for male. Table 4 shows the Information sources we used to answer the questions that Micromedex, Drugdex was the most usable (94.35%).

According to table 5, in period of 10-12 o'clock in the morning we had the most number of telephone calls (45.92%). Table 6 shows the kinds of poisonings. The total number of poisoning cases were 42 that the most frequent was drug poisoning (88.1%) followed by chemical substances (9.52%) and pesticides (2.38%).

Figure 1 depicts the various requests classification. 30.67% of total calls were about therapeutic uses of drugs, and 24.76% about adverse drug reaction, while for drug–drug interaction, drug in pregnancy, dosage, and poisoning and toxicology the percents were 10.10%, 4.55%, 3.61% and 3.47% retrospectively.

Figure 2 shows the kind of agents most frequently involved in questions. The most frequent ones were about anti-infections (31.05%), supplements and corticosteroids (18%). The least frequent one was diagnostic drugs (0.08%).

Table1. Caller identification in MDPIC report in 2008

Caller Identification	Number	Percent %
Patient	3086	81.42
Physician	192	5.07
Specialist	38	1.00
Pharmacist	404	10.66
Others	70	1.85
Total	3790	100.00

Table2. Caller's age in MDPIC report in 2008

Age distribution	Number	Percent %
0-2	181	6.00
2-12	237	7.86
12-18	72	2.39
18-30	962	31.89
30-40	694	23.00
40-60	610	20.22
>60	261	8.65
Total	3017	100.00

Table3. Caller' s gender in MDPIC report in 2008

Gender	Number	Percent %
Female	1934	64.36
Male	1071	35.64
Total	3005	100.00

Table 4. References and sources for answering in MDPIC report in 2008

References and sources	Number	Percent %
Micromedex, Drugdex	2523	94.35
Poisindex	25	0.93
PDR	9	0.34
Martindale	54	2.02
Drug Fact and Comparisons	18	0.67
Remington	3	0.11
Ellenhorn' Medical Toxicology	2	0.07
Merk index	1	0.04
Harrison's Internal Medicie	1	0.04
AHFS Drug Information	5	0.19
Internet	19	0.71
Total	2674	100.00

Table 5. Time of calls in MDPIC report in 2008

Time of calls	Number	Percent %
8-10	1028	27.12
10-12	1741	45.92
12-13	1001	26.14
13-14	21	0.55
Total	3791	100

Table 6. Kind of poisoning in MDPIC report in 2008

Kind of Poisoning	Number	Percent %
Drug poisoning	37	88.1
Chemicals	4	9.52
Pestisides	1	2.38
Total	42	100

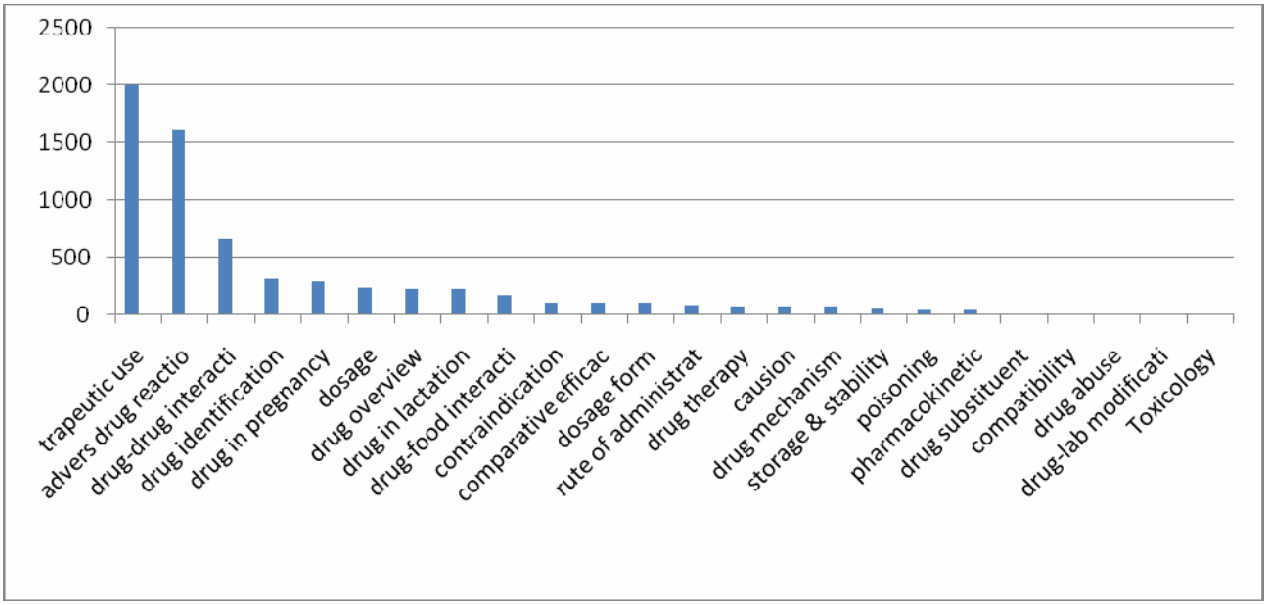

Figure 1.Classification of requests in MDPIC report in 2008

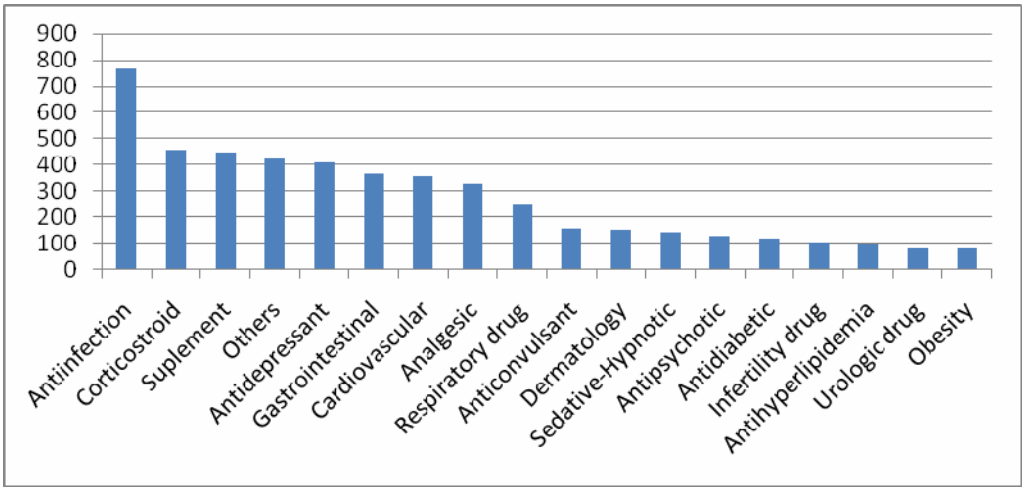

Figure2. The kind of agents questioned in MDPIC report in 2008

Discussion

The MDPIC (Mashhad Drug and Poison Information Center) is a branch of national drug and poison center of Iran that is located in city of Mashhad and providing consultations for both the health care system and the general public. There were scanty epidemiological studies of drug and toxicity in the past in Iran. After establishment of Tehran drug and information center in 1992, the same center is constituted in Mashhad in 1996 (3, 4).

One of the functions of MDPIC is to facilitate the collection and analysis of drug related data. This annual report of the MDPIC presented the data of 3790 cases who called to this center in 2008, which is the largest epidemiological study so far in Mashhad, and according to total calls of 2027 in 2007 (4), it shows a significant raising. For the reason of increasing in number of enquiries, the following factors should be considered in any discussion:

1- Proper publicity via sources as pamphlet, brochure, etc.
2- Increase the number of prescription and therefore an increase in the number of drug consumed.
3- Greater tendency and more curiosity about drugs and household chemicals.

A total of 3790 calls were made at MDPIC during 2008. In contrast with annual report for Tehran Drug and Toxicology Information Center in 2008 with the total case of 13949 and according to both cities' populations and work background it seems reliable (4). Almost 81.42% of calls were made by the general public and 18.75% by health care professionalisms. Pharmacists predominated in requests for drug information (10.66%) due to their more relevant to drug cases and public requests.

The percent of calls made by women at 10-12 o'clock was significantly more than men like Tehran center (64% versus 35%) (4), presumably because of their more free time, more involvement with family and their obsession.

According to age, the most callers were at the age of 18-30 years followed by 30-40 years old (31.89% and 23% respectively). It seems that young people have more attention about health and Safety.

The major asked question was about therapeutic indications (30.67%) and adverse drug reactions (24.76%) and it is related to the innovations of new drugs comes to market daily that is comparable with Tehran center, of course the percent of adverse reactions were more (4).

The five common type of drugs most asked information were Anti infections, Vitamins, Antidepressants, Steroids and Analgesics. The reasons probably are:

1- Analgesics, Anti infections, and Vitamins are used as OTC and have high percent of usage among people and are more available with or without prescriptions.
2- Patients who use Antidepressants have obsession about their drugs.
3- Steroids have serious adverse effects such as osteoporosis, increased susceptibility to infection, nausea, vomiting, anorexia and ulcerative esophagitis (5).

We had just 1.49% case of poisoning and the majority (88.10%) was drug exposure while 9.5% was chemicals. In contrast with same data for Tehran Drug and Poison Center with 11% for all poison cases in 1998, this is much lower.(6) According to more prevalence of poisoning referrals to hospital and clinics in Mashhad, this will be an important challenge. Imam Reza hospital's poison ward has been a great famous poisoning center in the east of Iran that covers a large population and it has established for a long time as a well-known center and this may be a reason for less number of calls about poisoning requests. We believed that more public propagation should be done about poisoning activity of center.

About kind of poisoning drug related cases were 88.8%, followed by chemicals and pesticides. US Annual Report of toxicity centers in 2007 shows the most cause of toxicity is chemicals versus drug toxicity and this data is not comparable with MDPIC and confirmed the drug information activity of center as a much important factor than clinical approaches (7).

These data may not directly identify the overall incidence of drug exposure and poisoning in Mashhad. Because the results rely on self reporting provided by the callers. These limitations are common to other national drug and poison information centers, including those in USA, Hong Kong and Palestinian (7-9).

Optimistically, this annual report can serve as a reference for subsequent comparison of drug and poisoning data in various parts of Iran and provide directions for future better guidelines.

Overall, data of one year show that there are low number of calls regarding poisoning and in greater extent people ask about drugs. The MDPIC database represents a valuable national resource to collect and monitor the common questions that people have about drugs and chemicals. As a result, patients in 18-30 years old asked questions about therapeutic uses and drug adverse reactions mostly. In order to reach ideal targets, introducing MDPIC to all health centers and hospitals around the province is recommended to promote activity to get more poisoning cases via calls. More information campaigns are needed to encourage people to use the services provided by the MDIC.

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