

Annual Report of Drug and Poison Information in Iran From March 2012 to March 2013

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Abstract- Drug and Poison Information Centers (DPICs) have a critical role in the fulfillment of rational drug use programs and provide services to the scientific community with the aim of improving the health and safety of drug use. This was a retrospective study on recorded calls of DPICs in Iran from March 2012 to March 2013. Data consisted of general information; drug and poisoning information, medical history and also the distribution of a number of calls collected by DPICs in Iran. The centers received a total of 171769 calls. Most calls were made by the patients (56.1%) and then the patients' relatives (38%). Also, 67% of the patients were determined as female. The calls mostly were focused on Adverse Drug Reactions (ADR) (15.3%), indications (14.0%) and drug evaluations (11.8%). Anti-infective agents, non-steroidal anti-inflammatory drugs (NSAIDs) and vitamins with 9.6%, 7%, and 6.8% frequencies were the highest frequently asked questions, respectively. Based on the results, patients do not receive enough information about their medications, from physicians and pharmacists. The DPICs have an important role to guide the people and provide the accurate drug and poison information and fill the absence of information that is not provided by medical staff. So, based on the important role of these centers, it is worth the Iran DPICs being introduced more to people, and we need more advertising around the country.

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Introduction

Recognition of the problem of drug and poisoning and also the need for specialized facilities to deal with it, as well as the existence of a number of health care professionals concerned with toxicities in human, has invariably been the primary prerequisite for the establishment of Drug and Poison Information Centers (DPIC). The first center in North America and Europe was created in 1950. After that, many of these centers in other countries, including developing and developed countries, have been created. The early centers were working in many fields such as medicine, pharmacology, occupational health, and toxicology. Today, many hospitals have maintained this structure. These centers are specialized units to respond the inquiries on therapeutic drug use and poison, in other words, they are providing information on poison and drugs in principle to the whole community, health Professionals and public (1). The first national DPIC in

Iran was established in 1997, as a part of Iran's Food and Drug Organization (FDO), supervised by the Ministry of Health and Medical Education (MOH) as the national DPIC. After the establishment of the first DPIC in Tehran, some other centers, also supervised by MOH, began their activities in other provinces. There are currently 38 centers across the country, which are mainly supported by local medical universities along with MOH, and currently the FDO. All of the health care professionals in these DPICs are available to all citizens free of charge, and some of these centers are 24 hours and 7 days in a week.

Services provided by DPICs, in community health system, supply significant benefits to the health of society with a reduction in medical errors, instructing patients for proper drug use and reduction in morbidity and mortality from drug and chemical poisoning (2). Such services provided by DPIC can also cause a significant reduction in medical expenses with preventing drug misuse as well as detecting the presence

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of drug toxicities and poisoning which are mild enough not to require patient transfer to medical centers (3). On the other hand, given that in developing countries, healthcare is less available, the existence of these centers can be very helpful. DPIC by enlisting the services of trained pharmacists, physicians, and specialists, has been trying to rationalize the process of advising patients and their physicians. In addition to responding medical questions, DPIC also does a proper help during the course of treatment.

According to the Iranian study, most of the callers to DIPC were the patients' relatives (49%) and were female (61%). Also, most patients were in the age range of 18 to 40 years and in 45.2% of the cases, the patients themselves called the DIPC. Most of the inquiries to Loghman poison center involve questions about drug indications (24%) and adverse reactions (21.1%). The drugs most commonly involved were antidepressants (12.4%), antimicrobials (12%), and analgesics (11.2%) (4).

The professional service of Iran DPICs should be introduced to Iranian population. Pharmaceutical products are the main causes of poisonings in Iran. Public education on safety and storage issues and also strict terms of sale should be implemented. In addition, the majority of poisonings occurred intentionally while the rate showed an increasing trend. Predisposing factors of this high rate should be studied (5).

Materials and Methods

This was a descriptive retrospective study by reviewing reported phone calls of DPICs in Iran to central division in Tehran from March 2012 to March 2013.

Data including the caller's demographic data, caller identification (as a patient or his/her relevant or friend), type of requested drug information (e.g. evaluation, administration, indication, identification, ADR, dosage, therapy, interactions and use in pregnancy and lactation, a summary of questions and answers) were collected.

Received calls to DPICs were managed by healthcare professionals, trained in clinical pharmacy, toxicology and exposure emergencies, mainly pharmacists that all worked under the supervision of a clinical pharmacist or toxicologist. The data express only those cases that are not duplicates and are classified by the regional DPIC as closed. The only time that a case is closed is when on PC, it is determined that no more follow-up/advise are required, or no further information is available. Data were entered into a

database and analyzed using Microsoft Excel (Microsoft Corp., Redmond, WA, USA).

Results

The center received a total of 171769 calls from 34 drug and poison information centers all over the country with an average of 470 calls per day from March 2012 to March 2013. These contacts mostly were focused on ADR (15.3%), indications (14.0%), drug evaluations (11.8%) and safety in pregnancy and lactation (8.4%) (Figure 1).

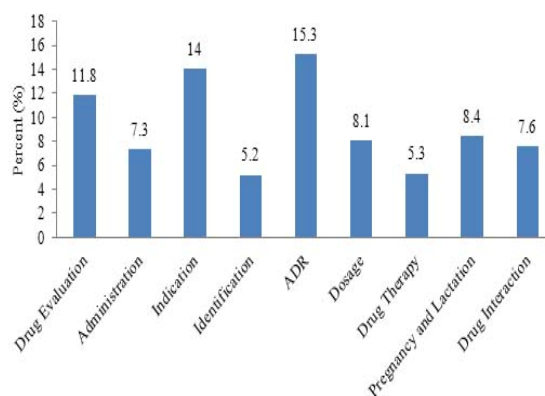


Figure 1. Distribution of information call to Iran DPICs according to most frequently asked questions.

Most calls were made by the patients (56.1%) and then the patients' relatives (38%), followed by medical staffs (4.8%; Figure 2).

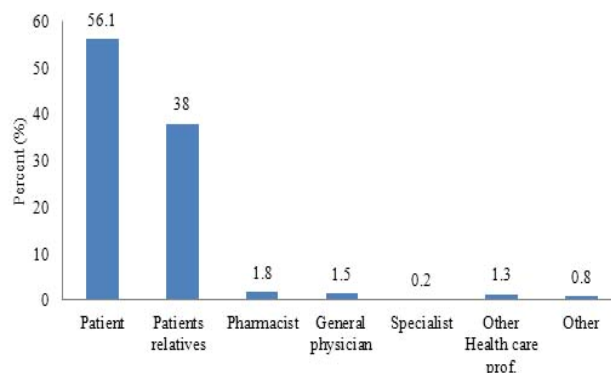


Figure 2. Characteristics of people that call to the DPICs

The distribution of age and gender for human exposures is outlined in figures 3 and 4. As the data shows, 113422 of the calls (67%) were determined as female, and 56045 of the calls (33%) were recognized as male (Figure 3).

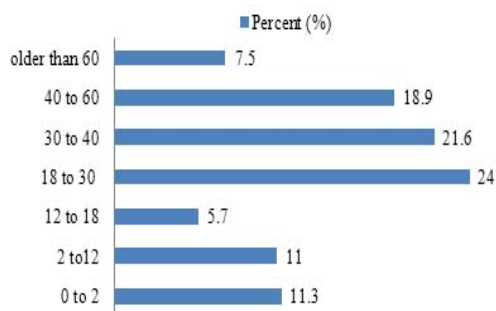


Figure 3. Distribution of calls to Iran DPICs according to the age of callers

The Greater number of patients who contacted to the DPICs was in the age group of 18-30 years old (Figure 4).

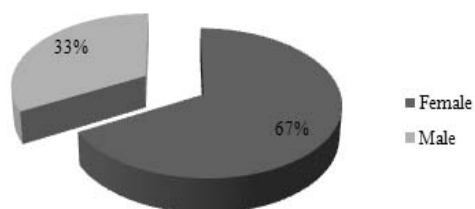


Figure 4. Distribution of calls to Iran DPICs according to gender of callers

The frequently requested information was related to anti-infective agents (9.6%). Non-steroidal anti-inflammatory drugs (NSAIDs), vitamins and antidepressants were the other most frequently asked questions (7%, 6.8%, and 6.1%) respectively (Figure 5).

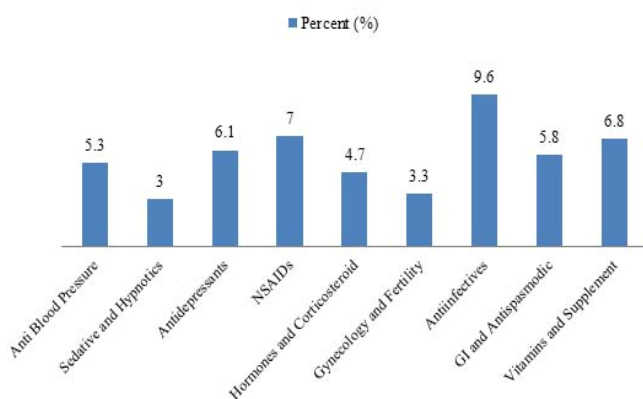


Figure 5. Distribution of calls to Iran DPICs according to characteristics of drug questions

It was noticed that the most frequent toxicities arise from drugs (51.7%), followed by food poisoning (9.9%), chemical poisoning (9.6%), animal biting (9.4%) and addictive drugs poisoning (8.2%) (Figure 6).

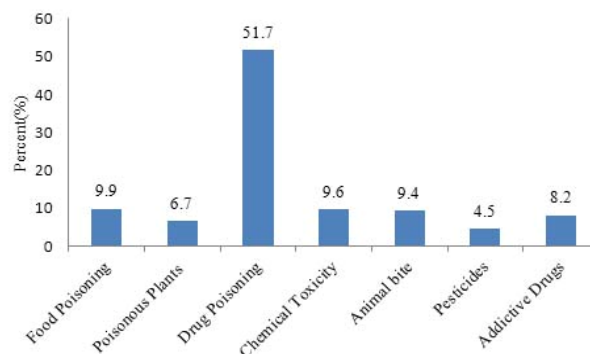


Figure 6. Distribution of poisoning cases according to the type of poison

Discussion

Many calls were regarding drug adverse effects; either questions about the possible side effects of the medicine that might appear after use or questions on the already appeared side effects. It is probable that many queries about ADR and indication were a result of weak drug consulting to patients (6). Therefore these centers can do their best to improve the performance of the health system, as much as possible.

Based on the results, most of the calls were made by the patients and then the patients' relatives and even when the patients' relatives contacted DPIC centers, health professionals preferred to talk with the patient, if the patient was conscious and alert enough, so that more detailed and exact information could be extracted, and a better patient support would be guaranteed.

Most of the calls (67%) were determined as female that are in line with results of a two-year (2010 and 2011) utilization of the pharmacist-operated drug information center in Iran that showed a majority of callers in both years were female (7). This finding also is in line with the previous study that showed the female (67%) as the most of the callers to Iranian DPICs (4). As regards the types of role responsibilities that is common among women may allow more time flexibility to pay attention to symptoms and take curative actions and also women's greater responsibility for family health, it is expected that most of the callers be women (8).

The highest number of patients who contacted to DPICs was in the age group of 18-30 years old that were in agreement with previous research which reported the

most patients called the DIPC were in the age range of 18 to 40 years (4). Indeed middle-aged people, by females, by those who are relatively better educated and have more incomes, more uses in health services and given the fact that Iran is a young country and this age group are much better-educated than older Iranians, education might be considered as a probable reason for the higher rate of contacts made by this age group. (9,10).

Indeed antibiotics often account for the largest proportion of drug expenditure in developing country. (11). Iran is also no exception. According to data published by the Food and Drug Affairs of the MOH, prescription of the antibiotics are very high in Iran (58%), which is four times higher than average usage in the world (12). Thus, according to the overuse of antibiotics, many questions about this class of medicines can be expected.

Due to the fact that Iran is one of the first twenty countries in the world and the second in Asia, in terms of drug use, and the fact that 20% of used medication in Iran are used without consulting health care professionals, the most frequent toxicities arise from drugs, followed by food poisoning, chemical poisoning, animal biting and addictive drugs poisoning.

On the other hand, unfortunately, although there are strict rules and frequent attempts to reduce transport of illicit drugs, trafficking in addictive drugs had been reportedly increased in many countries, including Iran, which results in increased ease of access to such drugs, and therefore poisoning due to illicit drugs is rising (13,14).

Based on the results, patients do not receive enough information about their medications from physicians and pharmacists. According to the drug and poison information center which were active in the country in 2012, these centers have an important role to guide the people and provide the accurate drug and poison information and fill the absence of information that is not provided by medical staff. So, based on the important role of these centers, it is worth the Iran DPICs being introduced more to people, and we need more advertising around the country. Furthermore, the data support the continued value of DPIC expertise and need for training more pharmacists to work in the center to give the appropriate information to medical groups and the public. In fact, these centers could considerably reduce medical errors, and appropriate referral of patients to treatment centers in addition to avoiding unnecessary referrals and consequently a dramatic reduction of treatment expenses.

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