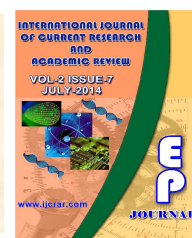




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Evaluation prevalence and causes of drug and chemical poisoning in patients referred to emergency wards of Sina Hospital of Tabriz University of Medical Sciences at 2012-13

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A B S T R A C T

Poisoning, is the oral or intravenous use of a drug in higher amount of therapeutic doses that can cause poisoning or death this condition forms 15-20 % Emergency Units referrals; it is also the most common cause of death in the adults. The aim of this study is the evaluation of prevalence and causes of poisoning in patients referring to emergency department of Tabriz Sina hospital in 2012. In a cross sectional analytic descriptive study in the poisoning ward of Tabriz Sina hospital on patients referring with poisoning, we studied the prevalence and causes of this condition in referring patients. The prevalence of toxicity in patients referring to emergency department was 44.16 % and significantly higher in women comparing to men. There was a significant relationship between the marital status and the occupational status with the intentionality of poisoning. In 988 of referring patients, 567 cases had only used the drug and 16 cases of patients had simultaneous usage of two drugs. 14 patients had abuse of drug and chemical materials. 80.3% of patients had no history of suicide. 49.7% of cases were poisoned with the home drugs. There was not significant relationship with the type of drug and the intentionality of poisoning. There was not significant relationship between the treatment results and the intentionality of poisoning. However, there was significant relationship between the status of patients after the treatment and the type of drug. The most of cases (97.2%) was discharged with recovery.

Introduction

Poisoning, is the oral or intravenous use of a drug in higher amount of therapeutic doses that can cause poisoning or death (Olson,

2011) this condition forms 15-20 % Emergency Units referrals (Zare fazloahi, 2010); it is also the most common cause of

death in the adults. Most cases of poisoning (37.5% percent poisoning) occurs in children aged 2 to 3 years of age, due to their curiosity in oral exploring the objects. The poisoning of children in this age can result from lack of proper maintenance of drugs, detergents and chemicals in the home (Dayan and Paine, 2004). Poisoning may be due to inadvertent or non-intentional usage (poisoning), intentional contact, and overdose of drugs or sensitivity (Ghazinour, 2009). Poisoning due to any reason (intentional or unintentional) is higher in rural areas and is claiming that despite the economic and industrial development the psychological problems and lack of communication is of the reasons for this difference.

Poisoning prevalence varies in different parts of Iran. For instance, in Tehran and Mashhad and Babol poisoning with sedatives is common while in Guilan the poisoning is due to Pesticides is more common (Ahmadi, 2011). Every year a large number of poisoning due to intentional and non-intentional problems occurs and causes problems ranging from mild illness to death, admission in the ICU and even death, this problems imposes a very high economic, social and health problems to societies, families and individuals dictate whether the best way to deal the problem is with the application of preventive ways (Masoumi, 2011).

Due to the abundance and availability of drugs and toxic chemicals like pesticides and the abuse of opioids the poisoning with intentional and non-intentional reasons is common. According to the statistics approximately 30000 cases of poisonings occurs in Tehran due to drug and chemical poisoning 12 thousand of these patients are admitted, 1,200 individuals admits to ICU

and a minimum of 120 cases expires as a result.

In developing countries, exposure to toxins is a major cause of acute diseases. Indeed, the intentional poisoning is the major cause of death in of more than 60 of deaths in Asia in Turkey overdose and accidental or intentional poisoning has become a problem for emergency care centers (Masoumi, 2011). In the UK the process of intentional poisonings in recent years has grown and become one important cause of emergency medical care in this country (Kapur, 2005).

Poisoning is the most common way of suicide in women and the second method in men. While that is responsible for 100000 hospitalizations and over 1,300 deaths per year in this country (Kapur, 2005) in Sri Lanka as a developing country in Asia suicide is, 15 times more than industrial countries (Eddleston, 2005) in Canada , the suicide is the most common of mortality reason of adolescents after the accidents (Shaw, 2005). Patients who attempted for suicide, use drugs and poisons of different types and it seems that the type of drug used for suicide is related to the aim of patients and its consideration of drug. Considering that currently in many houses many medications including benzodiazepines, tricycle antidepressants, and anti-hypertensive agents is found and there is a relative knowledge about the drugs in many people the aim of this study is the evaluation of prevalence and causes of poisoning in patients referring to emergency department of Tabriz Sina hospital in 2012.

Material and Methods

In a cross sectional analytic descriptive study in the poisoning ward of Tabriz Sina hospital on patients referring with poisoning, we

studied the prevalence and causes of this condition in referring patients.

The study population includes all the patients with poisoning referring to emergency ward of Sina hospital of Tabriz University of medical sciences and the study sample includes patients with poisoning referring to Sina hospital.

The study sample includes 988 patients of drug poisoning with were selected with simple numbering method which were enrolled into the study. The inclusion criteria include patients older than 14 years old, poisoning due to drugs and poisons and having the consent for contributing in the study. All the eligible patients was selected and enrolled to the study after complete description of the topic.

With regard to the goals of the study, the descriptive analysis was used for the analysis of the data obtained from the patients.

The limitation of the study includes the psychological status of patients, false answers from the patients, and the death of the patients, which led to loss to follow up of patients.

Results and Discussion

The prevalence of toxicity in patients referring to emergency department was 44.16 %. The Demographic findings of patients were shown in table 1. The prevalence of poisoning was significantly higher in women comparing to men ($P=0.001$).

The age distributional of patients is shown in table 1, the most of poisonings was seen in patients in the age group of 21 to 30 years and the least cases of poisoning was seen in patients older than 50 years. The educational level of patients is shown in table 1.

There was a significant relationship between the marital status and the intentionality of poisoning ($P=0.0001$). There was a significant relationship between the occupational status and the intentionality of poisoning ($P=0.003$). There was a significant relationship between the lodging and the intentionality of the poisoning ($P=0.016$).

There were other physical disorders in just 20.6% of patients. 5.8% of patients had no negative answers in questions regarding to family affairs. 31.8% of patients had no negative answers in questions regarding to social affairs. 3.7% of patients had no negative answers in questions regarding to economic affairs.

The psychological reasons of poisoning include 69.4% of anxiety and 5.4% of panic disorder. 5.4% of patients had no negative answers in psychological aspect. There was a significant difference between the physical reasons of poisoning so the minimum levels was related to cancer and the maximum amount was related to the neurologic disorders and there was significant difference between the personal reasons so the minimum level was related to the sense of invalidity and the maximum level was related to disappointers.

Frequency distribution of the types of drugs in patients with poisoning referred to Sina hospital was shown in table 2 and Frequency distribution of the types of drugs used by patients with poisoning referred to Sina hospital was shown in table 3.

There was significant difference between the mean level of family levels, which the minimum level was due to sense of entente in spouses, and the maximum level was related to drug usage.

There was also a significant difference in social causes which the minimum cases was

related to the problems in work place and the maximum cases was related to limited social activities.

The economic causes were significantly higher than the mean levels and physical, individual, familial social and psychological causes were significantly lower than the mean. In 988 cases, the most of cases had intentional suicide (78.8%), 14 cases of the number above had simultaneous drug and chemical material poisoning.

In 988 of referring patients, 567 cases had only used the drug and 16 cases of patients had simultaneous usage of two drugs. 14 patients had abuse of drug and chemical materials. In 988 patients, 93.7% of patients had no history of psychological disorders. 80.3% of patients had no history of suicide. The mean times of suicide attempt were 2.08 ± 1.47 . 94.1% of patients were poisoned orally and 49.7% of cases were poisoned with the home drugs.

There was not significant relationship with the type of drug and the intentionality of poisoning ($P=0.815$). There was not significant relationship between the treatment results and the intentionality of poisoning ($P=0.14$). However, there was significant relationship between the status of patients after the treatment and the type of drug ($P=0.023$). The most of cases (97.2%) was discharged with recovery. In recent years, due to the development of societies and the ease of access to drugs and poisons.

The incidence of poisonings had significantly increased. Nowadays the poisonings is one of the important causes of hospital referring, with regard to the global statistics of poisoning, this condition is classified as the important causes of acute illnesses worldwide (Ellenhorn and Barcelloux, 1988).

In USA, approximately 5 millions of patients refer to hospitals due to poisonings annually (Fauci, 1998). Unfortunately, a great portion of these cases includes intentional toxicities due to suicide (Fauci, 1998) the etiology of these cases includes drugs and poisons (Hawton and Fayg, 1997). The ease of access to these drugs makes these agents an available choice for persons with intention of suicide (Melev and Mikhor, 1992).

Suicide is a major problem in the society and 9% of all mortalities occur as an effect of this condition (Carlston, 1999). The suicide is the 8th cause of mortality in United states (Krulewitch, 2001). It is forecasted that by 2020, the suicide will be listed in the 10 most important cause of death worldwide (Carlston, 1999). The statistics of suicide in men in England, Wales, Scotland and Ireland has been increased since 1975 and the mortality of women who intended to suicide had been decreased (Roesler, 1997).

The statics of suicide in Greece in the time period of 19980 to 1990 in men was more than women in all ages, the cause and the motivation of these cases was complicated (Zacharakis, 1998). In our study, the frequency of intentional poisonings was significantly more in women comparing to women.

The suicide occurs at different age due to different causes, for example the main cause of suicide in adolescent is related to social problems, the relation with parents, educational problems, social failures, dissimilarity in the maturity, the sense of loneliness which occurs at the time of personality statement, the addiction of parents, divorce and drugs or alcohol abuse can be of the causes (Sobhani, 2000; Lester, 1997; Suzuki, 2000). There was a significant correlation between the marital status and the intentionality of the poisoning. It seems

that one of the important causes of trend to suicide in the adolescence can be the special psychosocial status. The incidence of suicide in this age range has been discussed in several studies (Roesler, 1997; Groholt and Wichstrom, 1998).

The lower incidence of suicide in our country in elderly people can be due to the strong familial correlations and the respectfulness of this people that is present in the Iranian ceremony. In addition to the reasons above, the high rate of suicides by the drugs can be due to ease of access to OTC drugs, incorrect administrating of drugs and over dosage of some agents (Carlston, 1999; Townsend, 2001).

The most of cases of poisonings was occurred as an effect of antidepressant agents like the studies conducted in Sweden (Carlston, 1999). In our study, the Benzodiazepines in 182 cases (32%), Opioids in 146 cases (25.7%) and tree cyclic antidepressants in 87 cases (15.3%) were responsible for the poisonings. The high rate of poisonings with opioids can be because of abusing cases of this drug category for analgesia and the euphoria caused by these

drugs (Joranson, 2000). The poisoning was the most common cause of suicide between the women in Greece(18%) while only a 9.4% of suicides was reported to be associated with poisoning(Zacharakis, 1998).

Upon a survey in Iran, 93.4% of suicides of children occurred with drug abusing and 3.3% was with non-pharmacologic methods (hanging) 30% of these drugs included tree cyclic antidepressants and 20% included anticonvulsants. According to a study conducted in Sweden over 25 % of suicides occur in people over 65 years (Ghazinour, 2009). Unlike our study, 4.8% of poisoning cases occurred in people over 50 years. Drug toxicity is a common method of suicide in young people in Sweden who often use non-prescription drugs (usually acetaminophen) and prescribed drugs in elderly people. Approximately 33% of cases of poisoning were reported to be associated with benzodiazepines and antidepressants (Carlston, 1999). Some studies have shown that benzodiazepine alone is responsible for the most cases of suicide (Carlston, 1999; Cattell and Jolley, 1995; Drummer and Ranson, 1996).

Table.1 The Demographic findings, age distributional and educational level of patients

		Type of Poisoning		Total
		Intentional	Unintentional	
Gender	Male	549(55.56%)	94(9.51%)	643(65.1%)
	Female	230(23.27%)	115(11.63%)	345(34.9%)
Marital Status	Single	291(29.45)	93(9.41%)	386(39.06%)
	Married	437(44.23%)	110(11.13%)	547(55.36%)
	Divorced	51(5.16)	6(0.6%)	57(5.76%)
Employment	Unemployed	502(50.8%)	111(11.23%)	613(62.04%)
	Employed	277(28.04%)	98(9.92%)	375(37.96%)
Age Group	14-20 year	182(18.42%)	34(3.44%)	216(21.86%)
	21-30 year	341(34.51%)	102(10.32%)	443(44.83%)
	31-50 year	229(23.18%)	53(5.36%)	282(28.54%)
	> 50 year	27(2.83%)	20(2.02%)	47(4.75%)

Table.2 Frequency distribution of the types of drugs in patients with poisoning referred to Sina hospital

Type of drug	Number	Percent
Drug	567	57.4
Toxin or chemical	407	41.2
Drug or chemical poison	14	1.4
Sum	988	100

Table.3 Frequency distribution of the types of drugs used by patients with poisoning referred to Sina hospital

Drugs	Number	Percent
Tricycles antidepressants	87	14.6
Anti-psychotic drugs	20	3.4
Steroidal anti-inflammatory	54	9
Barbiturates	17	2.8
Benzodiazepines	182	30.5
Opium	146	24.5
Cardiovascular Drugs	35	5.8
Alcohol	50	8.4
Carbamate	6	1
Sum	597	100

Benzodiazepines were the most common drugs used for suicide in our study. In Poland tranquilizers and sedatives poisoning among adults is at a rate of 83.7% (Malgorzata, 1996). According to the report the psychiatric drug multiple drugs using simultaneously was a secondary concern (Malgorzata, 1996). Unfortunately, the youth suicide rate is higher than other age groups (Abdollahi and Jalali, 1997; Gossel and Bricker, 1995). In our study, the highest percent (44.8 %) of patients was in the age group 21-30 years and lowest toxicity (8.4 percent) was in the age group above 50 years. The study by Van-der-Hock (Van-der-Hock, 1998), Kotwica (Kotwica, 1997) and GnyP (Gnyp and Lewandowska-stanek, 1997) indicates that more men than women commit suicide with drugs and chemicals.

In a study in Denmark in 1992, it was revealed that acute intoxication with barbiturates, acetaminophen and benzodiazepines in relatively more used in women comparing men (Nielsen and Nielsen, 1992). In 1998, the New the results of a study in New Zealand also found that more men than women use acetaminophen and antidepressants for suicide (Beautrais, 1998). There is also a factor related to gender in choosing the type of toxic agents that has been confirmed by Bill-Brahe study in Europe (Bill-Brahe, 1997).

The type of agent used for suicide is related to patient's gender, perhaps it is because of gender requirement, for example, and men are concerned with more chemical materials due to their gender and occupation

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