

ASSESSMENT OF POISONING INCIDENCES DUE TO USE OF HOUSEHOLD SUBSTANCES IN PESHAWAR

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ABSTRACT

OBJECTIVE:

The aim of this study is to determine the trend of poisoning due to household substances in Peshawar.

METHODOLOGY:

This was a retrospective observational study. All the information related to poisoning including mode of transmission, duration of poisoning, demographic information, duration of hospital stay, name of poison, amount of poison ingested, inhaled and intension of poisoning was from the medical record room of Khyber Teaching Hospital (KTH) casualty department. The cases reported with a history of household poisoning were recorded for a period of one year from February 2016 to January 2017.

RESULTS:

Among the total 217 patients, males female ratio was 1.3:1 where male 114 (51%) whereas 104 (49%) females, whereas intensity to commit suicide is more in females. Tablet overdose cases were 73 (34%) and poisoning due to common household poisons such as mosquito repellent, rat killer poison, kerosene oil, detol and detergents were 87 (36%). Victims inhaled and ingested Organophosphorous accidentally and intentionally were 62 (28%). Suicidal tendency was determined to be a hallmark among females. The age group between 18 to 31 year were found highly motivated to harm themselves. It was showed 196 (91%) patients consume with intention of suicide and only 20 (9%) were found accidental victims of poisoning.

CONCLUSION:

It was concluded that easy accesses to anti psychotic drugs without registered doctor's prescription, self medication, over dosage and rat killing pills were found the most prevalent cause of poisoning among victims belonging to low socioeconomic status. It was also indicated in the study that most of the accidental incidents happened at home when victim was either alone or left unattended.

KEY WORD: Poisoning incidences household substances

INTRODUCTION:

Acute poisoning and chemical exposure is a growing problem around the world [1]. The number incidence recorded at KTH are just the mere image of poisoning incidence happening in the community. According to the study conducted at three major hospital of Rawalpindi district showed that the trend of poisoning has been increased many folds since last decade [2]. Most of the

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incidences of poisoning reported were female and children from the rural population living within district Peshawar. Unintentional or accidental poisoning causes an estimated 180.4 thousand (180400) deaths per year [3]. Mortality rate due to this cause was 4 per 100,000 inhabitants, constituting the 47th specific cause of death [4]. Acute accidental poisoning is highly common in children [5]. In a national health survey of Pakistan, poisoning was the second commonest cause of unintentional injuries to children under the age of >5 years or below [6].

Exposure to house hold poisons is frequently found in younger age group probably due to inquisitiveness to explore things.

A study conducted at tertiary care hospital showed that poisoning was most common among two to five year of age (54%) [7]. Acute poisoning due to cleaning agents, detergents and disinfectants were due to exposure of an individual to a substance that can cause symptoms and signs of breathlessness, corrosion or damage to organs leading to irreversible damage to the living tissue or death. It is one of the major cause of pediatric poisoning. The incidence of acute poisoning in children is reported to be 0.33% to 7.6% more frequent in the summers [8]. There are certain factors that predispose to accidental poisoning in children like age socio-economic status, residence in urban or rural areas, education of mother, improper storage of harmful house hold products including kerosene oil, bleach and easy accessibility of medicines to children [9].

A study conducted at Rawalpindi General Hospital showed that poisoning was most common among two to five year of age (54%). The spectrum of poisoning is also getting broader and involved many aspects such as children of people working in paint and distemper manufacturing industries. Arsenic, lead and mercury are used frequently in local beauty makup powders and the workers may inhale these poisons [10]. The second most common cause of intentional poison in coastal areas of south india were found to be inebriants such as fuel inhalation and insecticide spay (organophosphorous compounds) [11]. The reasons for these hanging trends are socioeconomic patterns, new development of drugs accessibility to chemicals, agricultural modernization, green revolution in various regions and easy access to over-the-counter (OTC) drug [12]. Low socioeconomic status, joblessness, young age marriages, drug addition, poor health are also contributing significantly. Studies from India had demonstrated this trend shift from arsenic to opium, barbiturates and then to organophosphates over two decades [13]. The current study was conducted to identify the common household substances which are life threatening. Chemical substances use in routine in houses are also found dangerous for child growth may cause retard mental growth.

Materials and Methods:

The retrospective study was conducted at Khyber Teaching Hospital Peshawar a tertiary care hospital having a flow of over 1400-1500 outdoor patients per day. Information was collected from the medico-legal clinics and record room of hospital emergency and autopsy center. The collected data was from February 20016 to January 2017. All cases of poisoning were collected; socioeconomic status, age, sex, occupation and other demographic details were analyzed along with frequency of commonly used substances and their clinical presentation by using SPSS 16. Snake bites, scorpion sting and food poisoning were not included in the study.

The research approval was taken from Ethical Review Board of the KMC medical college. Permission to use data for research purpose was also taken from the Medical Superintendent KTH & Head of Causality department. The Duty Medico legal officer collected the case records from the Medical Records of emergency Department. Data was collected from the case records using a structured format (case Performa). The information included as questionnaire in the structured format including age, sex, marital status of the patient, mental health history, Family history, Name/type of poisoning agent, Management in the ward and ICU and drugs administered, Ventilator support, Duration of hospital stay, Outcome of the treatment. These case proforma data were finally analyzed with the help of a statistician using descriptive statistics.

Results:

The study included 217 cases of acute poisoning. Males were 114 (51%) and females were 104 (49%). Tablet overdose cases were 73 (34%) and poisoning due to common household poisons such as mosquito repellent, rat killer poison, kerosene oil, detol and detergents were 87 (36%) (Table 1). Patients consumed Organophosphorous poisoning were 62 (28%). The poisoning showed 196 (91%) patients consume with intention of suicide and only 20 (9%) cases were of unintentional poisoning.

Out of 8 cases reported between 0-17 years 2 victims were of drug over dosage and the rest 6 were due to ingestion of mosquito repellent, kerosene and wheat pills. The probability of incidence of intentional ingestion is much higher among age group of 19-30. 31 victims reported respiratory distress due to inhalation of organophosphorous fumes. Anti-Psychotic drug overdose was 33 and mosquito repellent were 32 patients. After intensive care and management 202 (93%) patients recovered and 16 (7%) patients died. Intensive care management was done in casualty with antidotes such as Atropine, Oximes, Vitamin K, and Flumazenil. Other therapeutic drugs used were Antibiotics, Antiepileptics, Pantoprazole Antacids and Ondansetron. The female patients tend to consume tablets and mosquito repellent poison more than the Organophosphorous. The easy availability of tranquilizer drugs without prescription and self-medication might be one of the major reasons for the increased incidence of poisoning among urban and semi-rural general population especially among younger adults. Table 2: Survival rate of the poisoning cases.

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The easy availability of tranquilizer drugs without prescription and self-medication might be one of the major reasons for the increased incidence of poisoning among urban and semi-rural general population especially among younger adults. Table 1: Total cases reported 217 1 MALE 114 (51%) 2 FEMALE 104 (49%) 3 Age 0-17 8 (1.12%) 4 Age 17-30 31 (14%) 5 Tablet over dose 33(15%) 6 Rat Pills 32(13%) 7 Intention of suicide 196 (91%) Table 2:

Table 1:

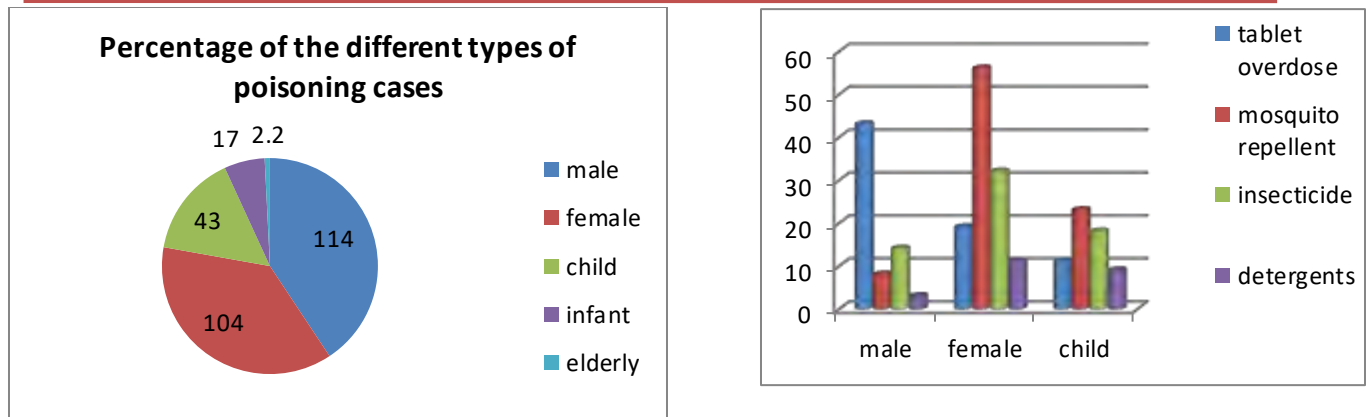
	Total reported cases	n=217
1	MALE	114 (51%)
2	FEMALE	104 (49%)
3	Age 0-17	8 (1.12%)
4	Age 17-30	31 (14%)
5	Tablet over dose	33(15%)
6	Rat Pills	32(13%)
7	Intention of suicide	196 (91%)

Table 2: Survival rate of the poisoning cases.

Deaths	16	7%
Recovered	202	93%

Table 3: Length of hospitalization in days (longer stay for ventilator support).

OPC	TAB	OTHERS
8	2	0



DISCUSSION

The incidence of acute poisoning in Peshawar is far less as compared with the information collected from other provinces of the country. In southern region of Punjab the ratio of poisoning is higher but it is due to insect bite, snake and scorpion bite inside houses [14]. The sex ratio of patients who consumed poison was almost equal (1:1.02). The most common type of poisoning consumed by the patients was drug overdose (33%) after that insecticides (28%) and then rest of the agents (mosquito repellent, rat killer etc) were 38%. Most of the victims are the native of semi urban and urban category. The drugs which were misused for the purpose of poisoning were sedatives (38%) especially Alprazolam and Diazepam and antipsychotics (24%). All patients with rat poison had jaundice secondary to hepatotoxicity, whereas only one patient with drug poisoning had hepatotoxicity [15]. Results of our study showed tablet overdose as a major reason for acute poisoning followed by organophosphorous poisoning and rat pill [16]. Pyrethroids are the substances used in mosquito repellent. They are 2250 times more toxic to insects than humans. Their toxic effects are due to delayed closure of the voltage gated sodium channels and in higher doses act on the GABA chloride channels inducing seizures [17]. Most of the patients who had tablet overdose spent less duration of stay in the hospital. Another study revealed that there is rapid upsurge in patients consuming pesticide in a period of 3 years [19]. The most common agent used for poisoning is mosquito repellent followed by wheat pills (aluminium phosphides) in married people [20]. For supportive management antibiotics, ondansetron, antacids, diuretics, antiepileptic and proton pump inhibitors were also used. Psychiatric counseling and therapy were given to most of the patients. Studies have reported that mislabeling and wrong container, like soft drink bottles as storage for Pesticide, cleaning product and kerosene, also contributed significantly as a risk factor in accidental poisoning [21]. It is suggestive that early identification of potential symptoms of depression, impulsive control disorders and anxiety in people and counseling will reduce the suicidal tendencies and decrease the rate of mortality and morbidity due to intentional poisoning. The scope of the study is limited due retrospective in nature, small sample size [22]. In our study we found that the majority of the patients are from low socioeconomic status middle aged from nearby urban community. The incidence and patterns of the acute poisoning were found to be highest due to tablet poisoning predominant in female and mosquito repellent poisoning being the second highest with male preponderance. We have also found that the commonly consumed drugs were, anti epileptic, benzodiazepines and antipsychotic agents [23]. Various studies concluded support our finding and concluded that Tablet overdose was found to be the highest incidence and Pyrethroids compound poisoning is the second widely used agent for the acute poisoning in our study [24]. We also found that mosquito repellent liquid poisoning was common among female patients. Mosquito repellent and wheat pills poisoning is one of the easily available chemical agent responsible for the household poison consumption

CONCLUSION:

It was concluded that easy accesses to anti-psychotic drugs without registered doctor's prescription, self-medication, over dosage, wheat pills and ingestion of mosquito repellent were found the most prevalent cause of poisoning among victims belonging to low socioeconomic status. It was also indicated in the study that most of the accidental incidents happened at home when victim was either alone or left unattended.

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