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Retrospective Assessment of Poisoning Cases in a Multi Specialty Hospital in Tamilnadu

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ABSTRACT

The present study aimed to evaluate the pattern of poisoning at a tertiary care hospital in South India and to study the socio-demographic profile of the same. Patients who were admitted to the Intensive Care Unit at SRM Medical College Hospital and Research Center were included in the study. Patients were studied for a period of eight months retrospectively to record the incidence, age, sex, domicile distribution, education, occupation, marital and socioeconomic status. Type of poisoning, various reasons and nature of poisoning were noted. Ethical clearance was obtained before the study and then, data was collected. The data was analyzed using descriptive statistics. The total number of poisoning cases was 261. Demographic details were examined. The type of poisons was founded to be organophosphates, oleander seeds, snake bite, nail polish, rodenticide, alcohol (methanol), antifungal drugs, antipsychotic drugs, ant killer, endosulphan, food, hair dye, kerosene and miscellaneous. The study concludes that poisoning is a communal cause of hospital admissions. The most poisoning cases were observed with pesticides handled by the farmers in the agriculture fields.

Key words: Poisons, organophosphates, pesticides, poison control center

INTRODUCTION

The poison may be defined as, a substance which harms health or destroys life when introduced into the system or applied externally (Bhoopendra and Unnikrishnan, 2006). Any substance ingested in large quantity can be toxic (Harish *et al*., 2011). Distress is the main reason for most of the poisoning. The various factors for distress are chronic disease states, business loss, love failure or differences with the intimate partner, examination or emotional disturbances, etc (Lall *et al*., 2003; Ayoglu *et al*., 2009; Inamdar *et al*., 2010).

World Health Organization (WHO) estimated that around 0.3 million people die due to various poisoning agents annually (London and Bailie, 2001; Paudyal, 2008). The global incidence of poisoning is not known. Recently, some review articles reported that the number of intoxications with organophosphate pesticides was 3 million per year and the number of deaths and casualties are 3,00,000 per year worldwide (Harvey and Champe, 2009; Kumar *et al*., 2010).

Studies have suggested that there is an increase in the number of deaths in a rural setup especially among the younger age group. Many rural patients get admitted to the SRM Medical College Hospital due to poisoning. In this study, we intend to analyse the various poisoning cases admitted to the emergency department.

METHODOLOGY

The study was carried out at the department of Intensive Care Unit (ICU), SRM Medical College Hospital and Research Center, Kattankulathur, Chennai for a period of eight months. The hospital is situated in South India and surrounded by 112 villages. The study was approved by the institutional review board of the SRM Medical College Hospital and Research Center.

The study was conducted in following steps such as: (1) Identifying the type of poisoning; (2) Design of the study; (3) Defining inclusion and exclusion criteria, standards and design of data entry format; (4) Literature review; (5) Data collection and (6) Data collection and interpretation. The data collection form was prepared and the data sheet had the details of patient's demographic like name, age, sex of the patient, inpatient number, date of admission, address of the patient, occupation, reason for poisoning and type of poisoning. The obtained data was subjected to descriptive statistical analysis.

RESULTS

A total of 261 poisoning cases were identified during the study period. The demographic details of the collected cases were shown in Table 1. Out of 261 cases, various reasons for poisoning were family problems 102 (39.08%), feeling lonely 54 (20.38%), teenage life events 40 (15.32%), depression 22 (8.42%), stress 16 (6.13%), health problem 15 (5.74%) and remaining 9 (3.44%) and 3 (1.14) cases were due to financial and business crisis respectively (Table 2).

Table 1: Patient's demographic details

Demographic details	No. of patients	Percentage
Age (years)		
5-20	43	16.47
21-35	178	68.19
36-50	31	11.87
>50	9	3.44
Gender		
Male	150	57.69
Female	111	42.52
Domicile		
Rural	188	72.03
Urban	73	27.96
Marital status		
Married	149	57.10
Unmarried	112	42.90

Table 2: Various reasons for poisoning

Reason for poisoning	No. of patients	Percentage
Family problems	102	39.08
Feeling lonely	54	20.38
Teenage life events	40	15.32
Depression	22	8.42
Stress	16	6.13
Health problems	15	5.74
Financial crisis	9	3.44
Business crisis	3	1.14

Table 3: Classification of various poisons consumed

Substance consumed	No. of patients	Percentage
Organophosphates	49	18.77
Oleander seeds	38	14.55
Snake bite	32	12.26
Nail polish	24	9.19
Rodenticide	22	8.42
Alcohol (methanol)	20	7.66
Antifungal drugs	18	6.89
Antipsychotic drugs	12	4.59
Ant killer	9	3.44
Endosulphan	8	3.06
Food	7	2.68
Hair dye	5	1.91
Kerosene	3	1.14
Miscellaneous	14	5.36

The type of poisoning and number of victims belonging to each category are shown in Table 3. The exposure substances identified as most commonly encountered in are emergency department included organophosphates 18.77% (n = 49), oleander seeds 14.55% (n = 38), snake bite 12.26% (n = 32), nail polish 9.19% (n = 24), rodenticide 8.42% (n = 22), alcohol (methanol) 7.66% (n = 20), antifungal drugs 6.89% (n = 18), antipsychotic drugs 4.59% (n = 12), ant killer 3.44% (n = 9), endosulphan 3.06% (n = 8), food 2.68% (n = 7), hair dye 1.91% (n = 5), kerosene 1.14% (n = 3) and miscellaneous 5.36% (n = 14).

DISCUSSION

The occurrence of 261 cases of poisoning in a single hospital over a period of eight months emphasizes the seriousness of the problem of poisoning in this area. Consuming poison in male gender is more than the female population in this study. This opinion is in accordance with other studies that also observed a male predominance (Isbister *et al*., 2008; Fedakar and Turkmen, 2008; Kanchan and Menezes, 2008; Glatstein *et al*., 2010). This could be due to the reason that men were more often exposed to the strain and stress in day to day life, as well as to the occupational threats than the females.

The third decade of a person's life was found to be the most attempted number of poisoning in many of the poison studies conducted in India and other countries (Sarava *et al*., 2007; Al-Barraq and Farahat, 2011). In the present study, we found that the maximum number of cases were in the age group of 21-30 years, this could be due to the reasons that in this age group, people are more prone to work pressure, love failure, marriage problem, quarrel with family and other life settlement factors.

Studies conducted not only in India but also in other countries reported that organophosphorous is the most frequently encountered compound in poisoning (Maskey *et al*., 2012; Rajanandh *et al*., 2013). This concept is in concordance to present study where we also observed organophosphorous compounds to be the primary cause of poisoning. Our hospital caters to the need of most of surrounding village people. Nearly 112 villages are around the hospital. Since farming is the main occupation, organophosphorous compounds are easily accessible as pesticides for crops. Thus, organophosphorous poisoning is more frequent in this study. Over The Counter (OTC), drugs are also one of the most important issues to be taken into account in India.

Establishment of strict policies against the sale and availability of pesticides and OTC drugs will be an effective way to control organophosphorous like poisoning and drug poisoning.

Life is a gift from God and no one has right to take it except the creator. There are many who are fighting for life, carving to live in this wonderful earth one more day. The doctors often strive hard to save lives. There is no problem without a solution, this should be explained to them and help them live peacefully. Providing counselling to the poisoned patients will reduce the chances of repeated attempts and help physicians to improve the quality of treatment, minimize the cost of therapy and the period of hospitalization.

CONCLUSION

Poisoning is a common cause of hospital admissions. The most poisoning cases were observed with pesticides handled by the farmers in the agriculture fields. The reason for poisoning among the majority of the patient population was family problems which cannot be treated medically. Here, it comes the need for counselling. Apart from this, the present study also highlights the lacunae of poison information services in a tertiary care hospital. Establishment of a 24 h working poison control center may help in identifying and managing the poison cases in a prompt and proper manner.

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