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Original Article

A study of poisoning cases in emergency Kathmandu Medical College Teaching Hospital

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Abstract
Objective: - To determine the pattern and severity of poisoning cases in emergency Kathmandu Medical College Teaching Hospital. **Design: -** Retrospective observational study.
Materials and Methods: - All the poisoning cases due to various agents who attended Emergency from 1st of April 2002 to 30th of March 2003 were evaluated retrospectively.
Results: - A total of 67 poisoning cases attended emergency Kathmandu Medical College Teaching Hospital over a period of one year. The overall female to male ratio was 1.09:1. Most poisoning occurred in the age group 21-30 for adults (38.8%) and 2-5 yrs for the children. Organophosphorous was the most common poisoning for the adults where as kerosene was common in children. Oral route was the most common route of administration which accounted 86.57%. Students (35.8%) and housewife (23.3%) were commonly involved in self poisoning. Intentional poisoning comprised 58.2% of all poisonings.
Conclusion: - Majority of the intentional poisoning occurred in the female housewife & students of younger age group but accidental poisoning was found common in children under five years mostly with kerosene ingestion.

Keywords: - Insecticides, organophosphorous, Poisoning, Zinc Phosphide

Acute poisoning with various substance is common everywhere. The earlier the initial resuscitations, gastric decontamination and use of specific antidotes the better the outcome. But unfortunately no specific antidotes for all poisoning are available nor proper treatment protocol. Only very few studies have been undertaken on this topics. Although the incidence of poisoning is high, fortunately morbidity & mortality due to poisoning is low, specially in case of accidental poisoning because of low dose of the poison. This study was undertaken to determine the extent of poison related emergencies and to assess the effect of variables such as age, sex, and agent on poisoning frequency.

Materials and Methods

A retrospective analysis of all poisoning cases who attended emergency, Kathmandu Medical College Teaching Hospital over a period of one year (1st April 2002 to 30th March 2003) was done. A total of 67 cases with poisoning are included in this study. Data regarding age, sex, occupation, types & causes of poisoning, outcome, types of disposal were collected from the hospital records and analysed. Cases with food poisoning and insect/snake bites are not included in this study.

Results

A total of 67 cases of acute poisoning attended emergency over a period of one year. The overall female to male ratio was 1.09:1. The majority of poisoning cases were found in the age group of 21-30 yrs (38.8%). Second place occupied the age group 11-20 yrs (34.3%). Students were found to occupy the first place (35.8%) where as housewives occupied the second place (22.8%) of all poisonings. In this study organophosphorous was the most common poisoning agent (19.4%) in adults but kerosene was common in children (13.4%). Intentional poisoning was found in 58.2% of cases where as accidental poisoning was found in 41.8% mostly with kerosene in children 86.5% cases were found to use the poison orally where as 13.4% of cases were found due to inhalation of carbonmonooxide while living in a poorly ventilated room with burning firewood. Half of the poisoning cases (50.7%) had to be admitted because of their seriousness but 37.3% were discharged from emergency after emergency treatment.

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The following tables and the diagram show the results of this study.

Table 1: - Distribution of poisoning cases by sex

Sex	No. of cases	Percentage %
Male	32	47.7
Female	35	52.3
Total	67	100

Table 2: - Distribution of poisoning cases by age

Age	No. of cases	Percentage %
< 10 yrs	11	16.4
11-20 yrs	23	34.3
21-30 yrs	26	38.8
31-40 yrs	5	7.4
> 40 yrs	2	2.9
Total	67	100

Table 3: - Occupation of the patients

Occupation	No. of cases	Percentage %
Farmer	6	8.9
Service holder	6	8.9
Students	24	35.8
Housewife	15	22.3
Others(including children)	16	23.8
Total	67	100

Table 4: - Types of poison

Poison	No. of cases	Percentage %
OP	13	19.4
Zinc phosphide	7	10.4
Alcohol	9	13.4
Antidepressant /Benzodiazepines	5	7.4
CO	9	13.4
Kerosene	9	13.4
Other(phenol, nail polish remover)	11	16.1
Unidentified	4	5.8
Total	67	100

Table 5: - Reasons for taking poison

Reason	No. of cases	Percentage %
Accidental	28	41.8
Intentional (family conflict, job problem, psychiatric illness)	39	58.2
Homicidal	-	-
Total	67	100

Table 6: - Route of Administration

Route	No. of cases	Percentage %
Oral	58	86.5
Inhalation	9	13.4
I/M, I/V	-	-
Total	67	100

Table 7: - Types of disposal of the patients

Disposal	No. of cases	Percentage %
Discharged from ER	25	37.3
Admitted	34	50.7
Referred to other centres	3	4.7
LAMA	4	5.9
Died	1	1.5
Total	67	100

Discussion

In this study female poisoning cases were 35(52.3%) where as male patients were 32(47.7%). The female to male ratio was 1.09:1. Similar results were found in other studies carried out in other centers[1,2,3,4,5,7,10,11.] However in childhood poisoning male predominance was noted in one study at Kanti Children Hospital[6]. In this study the most vulnerable age group was 1- 3 years which comprised 73.1% of all poisoning cases. In this study most of the cases were found in the age group 21 -30 years (38.8%). This result is consistent with the results of studies carried out in others centres [1,2,5,8].

Students were found most commonly involved in poisoning (35.8%) and second place occupied the housewives (22.3%). Similar results were found in other studies carried out by Kafle et.al [5] and Pathak et.al[8]. But this result contrasts to the result of study in Russia where students comprised only 13% [7].However in other studies housewives occupied the first place in other centres [1,2,4,5,8,11.]

As in the other studies carried out in other centres, organophosphorous was the most commonly used for self poisoning (19.4%). Zink phosphide was the second common poisoning after OP in other studies[1,2,5,11]. We found only in 10.4% on case suffering for zinc phosphide poisoning. But in case of children this result differs from the adult one. In a study carried out in Kanti Children Hospital kerosene was found to be the most common poisoning (37.7%) [6]. In this study 7 children out of 11 under 10 years were found suffering from kerosene poisoning (63.63%).Similar result was found in a study done by Urmila et.al in Nepal Medial College where kerosene poisoning was found in 68% of all childhood poisoning under five years[1]. Similar results were noticed in another study carried out by Ghimire et.al where kerosene poisoning was found in 18.2% of cases[11]. It comprised about 13.23% of all the poisoning. Not surprisingly alcohol intoxication was found common in this study (13.4%).

Although organophosphorous and insecticide poisoning is common in Nepal and other developing countries, this is some what different in developed countries. In a study carried out in Russia medical agents were found to be the dominating means of poisoning (87.3%), and insecticide comprised only 3.0% [7]. Similar results were found in a study carried out in Tehran where poisoning due to drugs was found in 60.2% cases and pesticide poisoning were found only in 19.2% case [3].

Intentional poisoning comprised 58.2% and accidental poisoning comprised 41.8%. This result is consistent with the results of other hospital[1, 2,4,5,7,8,10]. Lohani et al also found similar results in other studies[9,10]. Causes of intention poisoning were family conflict, job problems, associated psychiatric illness, poverty. But in cases of children most of the poisonings are due to either accidental ingestion of household chemicals or medicines, which is rare in children over 4 yrs and is common poisoning in children under 4 yrs [6]. Similar results was found by Mohommad et.al in a study in Tehran[3].

Common route of poisoning was oral administration of the poison /drug (86.5%). Only 13.4% poisoning was due to inhalation of carbon monoxide while living/sleeping in a poorly ventilated room with burning fire wood/stove inside room. No one was found to use I /M or I/V. About 37.3% of the poisoning cases were discharged from Emergency after emergency management and observation for few hours. 50.7% cases were admitted to ICU/medical ward. One patient (1.5%) died in emergency while undergoing treatment.

Conclusion

As shown by the studies carried out in various time by Kafle et al in Tribhuvan University Teaching Hospital [5], Urmila et al in Nepal Medical College[1], Pratap et al in Tribhuvan University Teaching Hospital[2] there is a rising trend in the number of poisoning cases coming to the hospital. This is because of socioeconomic status of the country, frustration, family conflict, job problem, easy availability of the pesticides, drugs, and easy approachable placement of household

chemicals/medicines by the children at home. So it is very important that there should be strict rules regarding selling of pesticides and psychotropic medicines. Such substances should not be sold without prescription of registered physician or chemist. All household harmful chemicals and medicines should be placed in a place that is not accessible to the children. Poor people in our country usually in winter season live / sleep in a poorly ventilated room with burning firewood inside and often get poisoned with carbonmonoxide inhalation. So, it is very necessary to educate them not to live/sleep in a poorly ventilated room with burning firewood inside. Other means of warming room in winter season should be explained.

Till now there is only one poisoning information centre in Kathmandu and is very helpful for us but not sufficient to cover the other parts of the country. So such information centres should be established in the other parts of the country. There should be a proper treatment protocol regarding poisoning in every hospital. All poisoning cases with features of toxicity, toxic dose, I/M or I/V use, multiple agents used and associated with other medical illness should be admitted in ward after emergency treatment. All poisoning cases to be informed to the police and assessed by psychiatrist before being discharged from hospital.

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Reference

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