

Clinical Profile of Deliberate Self Poisoning in Eastern Part of the Sri Lanka

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Abstract: The rate of non-fatal deliberate self-harm (DSH) in Sri Lanka has increased in recent years, with associated morbidity and economic cost to the country. Pesticide ingestion is the commonest mode of suicide in Asia with an estimated loss of around 300,000 lives every year. We conducted a cross-sectional observational study in patients with 12 years of age and above who were admitted with deliberate self-harm (DSH) in Teaching Hospital Batticaloa, Sri Lanka. Of the 121 patients observed 83 (68.6%) females and 38 (31.4%) males. Among them, 119 (98.34%) cases (1.65%) were of intentional poisoning and only two cases (1.44%) were of accidental poisoning. In this study, the majority of victims 47(38.84%) were young age group (20-29). Forty-two (34.71%) were teenagers. In the present study, the commonest poisoning agent was yellow oleander seeds 33 (27.3 %) followed by organophosphorus compounds 23(19%) and Paracetamol overdose 22 (18.2%). These findings support a strategy of limiting easy access to pesticides and oleander, and for improving the supply and effectiveness of antidotes, as a strategy for reducing fatal self-poisoning in rural Sri Lanka.

Keywords: Deliberate self harm in Sri Lanka, attempted suicide in Sri Lanka, and deliberate self harm.

INTRODUCTION

Non-fatal deliberate self-harm (DSH) and suicides are serious global health problems in many low- and middle-income countries including Sri Lanka. Agents used for DSH varies from place to place; in general, drugs are the commonest agent in developed countries whereas pesticides are common in developing and underdeveloped countries [1]. Pesticide ingestion is the commonest mode of suicide in Asia with an estimated loss of around 300,000 lives every year. DSH with Pesticide poisoning estimated to account for up to one-third of the world's suicides and it is the most common method of suicide in Sri Lanka, and in other South Asian countries [2, 3].

World Health Organization (WHO) report estimates that poisoning as one of the most common causes of increased morbidity and mortality rate Worldwide. The global incidence of poisoning is not known. It may be speculated that up to half a million people die each year as a result of various kinds of poisoning, including poisoning by natural toxins. However, in Sri Lanka, the exact incidence cannot be defined as there is under-reporting of cases of poisoning.

In 1991 Sri Lanka had the uncertain distinction of being the country with the highest suicide rate in the world (47/100,000 population) [4]. Even now statistics in Sri Lanka manifest an alarmingly high rate of suicide and as healthcare providers, we have to be very much concerned about this situation and we should take every possible measure to reduce such unnecessary loss of life and the burden on health resources. In general suicide

rate of Sri Lanka is shown to be on the decline since 1995. Nevertheless, not much information is available on the variations in suicide rates among different demographic, social and geographical sectors of the country [5].

Pesticide poisoning is often intentional with a motive of self-harm. Unfortunately, as pesticides are highly toxic its ingestion carries a very high mortality. Besides pesticides, ingestion of yellow oleander is now known to cause high mortality in the North Central Province and in Hambantota district. Yellow oleander poisoning (*Thevetia peruviana*) was first reported in Sri Lanka in 1979 and since then the number of patients reported to be taking yellow oleander has greatly increased. Drug overdose is a leading cause of hospital admission and in more 50% instances the drug incriminated is paracetamol. Fortunately, deaths due

overdose of paracetamol are rare. Poisoning due to accidental or homicidal causes is very rare.

METHODOLOGY

We conducted a cross-sectional observational study in patients with 12 years of age and above who were admitted with deliberate self-harm (DSH) in Teaching Hospital Batticaloa, SriLanka to identify the common agents used for poisoning in our area, to know the pattern of poison and the outcome of such cases. All consecutive cases with DSH admitted on all Days over a period of three months from 12th of April to 12th of July were observed. Nature of poisoning was confirmed from patient’s clinical features, reference letter and/or from the bottle of poison produced. Patients are initially resuscitated in the emergency department and standard treatment was provided according to our hospital guidelines. Specific antidotes were given according to the poison exposed. Gastric lavage, activated charcoal and other supportive care were provided in appropriate cases. Demographic features of the patients, presenting clinical symptoms and signs were noted. Patients were followed up until recovery or death. Complications developed during the hospital stay and in-hospital mortality were recorded.

A descriptive analysis was done on all variables to obtain a frequency distribution. Quantitative variables were reported with range, frequency and percentage. Proportions were analyzed with chi-square test or 2-tailed Fisher's exact test whenever appropriate. P value of 0.05 or less was considered as statistically significant. Data were analyzed using Statistical Package of Social Sciences version 19.

RESULTS

Of the 121 patients observed 83 (68.6%) females and 38 (31.4%) males. Among them, 119 (98.34%) cases were of intentional poisoning and only two cases (1.65%) were of accidental poisoning. In this study, majority of victims 47(38.84%) were young age group (20-29) (Table 1).Forty two (34.71%) were teenagers. In the present study, the commonest poisoning agent was yellow oleander seeds 33 (27.3 %) followed by organophosphorus compounds 23(19%) and Paracetamol overdose 22 (18.2%).Drugs other than paracetamol 11 (9.1%), pesticide other than organophosphorus compounds 9(7.4%), run rat 6(5%) and cerebral manga 6(5%) and others 11 (9.1%) (Table 2).It was also found that the incidence of poisoning decreased with increasing age (Table 1). Religion wise maximum occurrence was found among Hindus.

Table 1: Number of DSH with age distribution

Age	male	Female	Total
12-19	7	35	42(34.71%)
20-29	14	33	47(38.84%)
30-39	9	9	18(14.87%)
40-49	7	4	11(9.09%)
>50	1	2	3(2.47%)
Total	38	83	121(100%)

Table 2: Types of DSH Reported

Type of poison	Frequency	Percent (%)
PARACETAMOL	22	18.2
Yellow oleander	33	27.3
Organophosphate(OP)	23	19.0
MULTI DRUG	2	1.7
IRON TABLET	1	.8
KEROSIN	3	2.5
CEREBRAL MANGA	6	5.0
PESTICIDE OTHER THAN OP	9	7.4
OTHERS	5	4.1
DRUG	11	9.1
RUN RAT	6	5.0
Total	121	100.0

DISCUSSION

The incidence of acute poisoning in SriLanka is slowly increasing. Since, there is no wide-organized poisoning database or well-coordinated national poison

information center, the exact picture of poisoning in SriLanka is unknown. In the present study, the commonest poisoning agent was yellow oleander seeds. In this study, females 83 (68.6%) outnumbered males 38

(31.4%). Various national and international studies have projected an increase in the incidence of intentional poisoning seen among males than females [6, 7].

Most of the cases were in the age group of 20-29 years. Furthermore, the majority of cases 68(73.55%) were between 12 and 29 years old. Prevalence of DSH more common among young age groups, this similar pattern of distribution has been seen in other countries like India and Bangladesh [8]. This can be explained by the fact that the persons of this age group are suffering from the stress of the modern lifestyles, failure in love, family problems, nuclear family concept, emotional and social disharmony, occupational problems and risk-taking behaviors at these ages [9, 10].

In this study, most of the cases were yellow oleander poisoning 33(27.3%). The second toxic agent used for both organophosphate 23(19%) and paracetamol 22(18.2%) poisonings. All three poisonings covered nearly two-thirds of the total poisonings in the east part of the Sri Lanka. The findings are similar to the study done by Michael Eddleston *et al* [11].

In contrast, other parts of the Sri Lanka and neighbors country likes India and Bangladesh, Organophosphate poisonings were the leading cause of DSH [1, 2, 9]. Patients were poisoned with medications following unintentional overdose or abusing for self-harm. Among them, paracetamol was the most common. This is because, in Sri Lanka, most medications are cheap and easily available in markets.

Non-fatal self-poisoning in Sri Lanka is reported to be associated with interpersonal conflict, with short premeditation, and also to be associated with alcohol misuse among males. Factors like dowry, cruelty by the in-laws, family quarrels, maladjustment in married life and dependence of women on husband are responsible for the higher incidence of poisoning among house wives [13]. Failure in the exams or inability to cope up the high expectations from parents and teachers has increased the incidence of poisoning among students.

There is a shortage of information about potential associations with other factors such as psychiatric morbidity and chronic stressors. Reduction of attempted suicide rates needs to be a national priority, and available evidence suggests the need for integrated intervention strategies which encompass several broad aspects, namely community-based development of interpersonal skills among young people, community based programs to reduce alcohol misuse, plus screening for and specific management of those at high risk of repetition following non-fatal self-poisoning. As agriculture is the main occupation of the

people in the rural area, oleander seeds and organophosphorus were easily available among locality.

These findings support a strategy of limiting easy access to pesticides and oleander, and for improving the supply and effectiveness of antidotes, as a strategy for reducing fatal self-poisoning in rural Sri Lanka

CONCLUSION

Poison is a substance that causes damage or injury to the body and endangers one's life due to its exposure by means of ingestion, inhalation or contact. Acute poisoning is defined as acute exposure (less than 24hrs) to the toxic substance. Acute poisoning due to Accidental and suicidal exposure causes significant mortality and morbidity throughout the world. Poisonings in the east part of the Sri Lanka are mostly due to yellow oleander and organophosphate poison. Therefore, all peripheral hospitals should be well equipped with antidotes of both oleander and organophosphate poison and other supportive treatments. The incidence of poisoning and its morbidity and mortality can be reduced by developing and implementation of effective prevention strategies. Moreover, prospectively- designed large- scale studies are required to provide the evidence-based facts to underpin public health strategies and for implementation of preventive measures.

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