|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2018: 75.71
Original Research Article
Volume 4, Issue 8; August: 2020; Page No. 57-59

OUTCOME OF THE DELIBERATE SELF POISONING IN TERTIARY CARE SETTING, IGMC SHIMLA

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Article Info: Received 10 July 2020; Accepted 21 August 2020
DOI: https://doi.org/10.32553/ijmbs.v4i8.1352
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Conflict of interest: No conflict of interest.

Abstract
Background: Profile of deliberate self poisoning in an area depends upon a variety of factors, ranging from access to and availability of poison, socio-economic status of the individual, cultural and religious influences, etc.
Methods: The study was a cross sectional observational study which was conducted in department of Medicine, Indira Gandhi Medical College, Shimla over a period of one year starting from 1st July, 2018 to 30th June, 2019.
Results: Out of 134 patients 24(17.91%) patients had fatal outcome and the paraquat poisoning was the most common cause for deadly outcome (n=11).
Conclusion: The outcomes of the study indicate that significant opportunities for reducing mortality exist by better medical management as first aid & by further restrictions on the most toxic pesticides.
Keywords: Poisoning, Organophosphates, Outcome.

Introduction

Suicide is a major public health problem in many developing countries[1]. Suicide is one of the ten major causes of death in India. Suicide attempts (both fatal and non fatal) are a challenging public health issue. An increasing rate of suicide in any society is an index of social disorganization. According to the National Crime Bureau (2015), incidence rate of suicide was 10.6 per lakh population during 2014 and the suicide rate for Himachal Pradesh was 7.7 per lakh population[2].

Methods of suicide are diverse throughout the world. The method used for suicide has also been cited as important to determining risk among particular subgroups of individuals. Poisoning is defined as unfavourable complication caused by the use of drugs, chemical substances and other materials. The nature of poisoning is classified into accidental, non-accidental, deliberate self-poisoning, which may be covered under section 304-A (IPC). Deliberate Self-Poisoning (DSP) is one of the most common methods of suicide and is widely spread all over the world[3] Deliberate self poisoning cases are increasing because of tension and worry in today's fast life especially in developing countries, DSP has become an important health problem.

According to the World Health Organization (WHO), most of the cases of fatal poisoning occur in developing countries, predominantly among the rural population[4].Therefore, early diagnosis, treatment and prevention are crucial in reducing the burden of poisoning related injury in any country.

Very few studies are published on subject of deliberate self poisoning from North India. So, this study has been aimed to determine the outcome of patients with deliberate self poisoning in Himachal Pradesh which is a hilly state of Northern India with farm practices like agriculture and horticulture as the principal occupation.

Material and Methods

Study Design

The study was a cross sectional observational study which was conducted in department of Medicine, Indira Gandhi Medical College, Shimla over a period of one year starting from 1st July, 2018 to 30th June, 2019.

Study Population

The study included all consecutive patients admitted with alleged history of self poisoning in the Department of Medicine, IGMC, Shimla.

Inclusion Criteria

1. Patients hospitalised with deliberate self poisoning in casualty,
2. Patients aged > 18 years
3. Those who consented to participate in the study.

Exclusion Criteria

1. Patients in whom deliberate self poisoning is not the presenting complaint
2. Patients not willing to give consent.

Methodology:

- All the patients who presented to emergency with complaint of deliberate self poisoning during the study period and satisfy the inclusion criteria were included in the study.
- A written informed consent was taken from all participants. A detailed history with duration of symptoms was taken and recorded as per the case recording format. All patients were subjected to detailed clinical examination and relevant laboratory investigations as per Proforma.
- In case if patient was not able to give consent because of intoxicated state or unconsciousness then the subject was included in study only if guardian or responsible attendant gave consent.

Statistical Analysis

Data collected was entered in excel sheet and accuracy of data entered was checked. Categorical variables were expressed as frequencies and percentages. It was done using latest available version of Epi Info.

Observations

The present study entitled "Clinical profile of deliberate self poisoning in tertiary care setting- A hospital based cross sectional study" was conducted in Department of Medicine, Indira Gandhi Medical College Shimla (HP) over a period of one year.

During this period 134 cases of poisoning were studied who were admitted in General Medicine wards. Detailed history taken and thorough examination, investigation and follow up of all the patients was done in accordance of proforma enclosed.

The age of study population ranged from 18 to 78 years with mean age of 33.27 years. Out of total 134 cases of Poisoning, 75 subjects (56%) were male and 59 subjects (44%) were female, with the male to female ratio was 1.27:1 Most of the patients were in the age group of 20 to 29 years 59 (44%), followed by the patients in the age group of 30 to 39 years 36 (26.9%) and only 3patients(2.2%) belonged to age group below 20 years. 104 patients (77.61%) belonged to rural setting and 30(22.38%) belonged to urban setting.

Table 1: Agents of poisoning

Agent of Poisoning	Number	Percentage
Organophosphorous	44	32.8%
Paraquat	15	11.2%
Zinc/Aluminium phosphide	12	9%
Herbicides	11	8.2%
Pyrethroids	7	5.2%
Organophosphorous &Pyrethroids	7	5.2%
Overdose of commonly used over the counter medication	5	3.7%
Carbamates	3	2.2%
Anticoagulant	3	2.2%
Organochloride	2	1.5%
Substance Abuse/ Recreational Drugs	2	1.5%
Others	23	17.2%
Total	134	100%

Table 2: Agents of poisoning and their association with mortality

Agent of poisoning	Alive	Dead	Mortality
Paraquat	04	11	73.33%
Organophosporus	38	6	13.63%
Others	18	5	27.77%
Aluminium phosphide	11	1	9.09%
Organophosporus & Pyrethroids	06	1	14.28%

All patients were followed for outcome during hospital stay. Outcome was measured as death, survived and improved due to deliberate self poisoning.

Out of 134 patients 24(17.91%) patients had fatal outcome and the paraquat poisoning was the most common cause for deadly outcome (n=11).

Table 3: Sex distribution of Dead patients

Total	Male	Female
24	15	09

Among Dead patients, 15(62.5%) were males and 9(37.5%) were females.

Table 4: Sex wise distribution of poisoning among Dead patients

Agent of poisoning	Male	Females
Paraquat	09	02
Organophosporus	06	--
Aluminium phosphide	--	01
Others	--	05
Organophosporus & Pyrethroid	--	01
Total(24)	15	09

Among 15 male dead patients, paraquat and organophosporus were main causes. In female 2 were paraquat, 5 were others, and 1 was organophosporus poisoning responsible for deaths.

Table 5: Mean duration of hospital stay

Agent of poisoning	Mean duration of hospital stay (days)
Paraquat	9.80
Organophosporus	6.23
Analgesics	4.00
Organochlorine	4.00
Carbamates	3.67
Pyrethroids	3.71
Other medication	3.25
Herbicides	3.91
ZincPhosphide/Aluminium phosphide	3.67
Anticoagulant	4.00
Others	3.65
Substance abuse/Recreational drugs	3.00
Organophosporus+Pyrethroids	4.00

Mean duration of hospital stay was maximum in Paraquat poisoning (9.8 days), followed by organophophorous (6.2days), analgesics, organochlorine and pyrethroids (4 days) respectively.

Table 6: Outcome on basis of first aid received

Outcome	First aid received	rst aid not received	Total
Alive	77(78.5%)	33(91.6%)	110
Dead	21(21.4%)	03(8.3%)	24
Total	98	36	134

Out of 24 dead patients, 3 patients had received no first aid. Mortality was low in the patients who were directly transported to tertiary care setting, which indicates that first aid for poisoning in primary care setting is not adequate.

Table 7: Age group wise outcome

Age group	Alive	Dead	Total
10-19	3	0	3
20-29	51	8	59
30-39	28	8	36
40-49	15	6	21
50-59	8	0	8
>60	5	2	7
Total	110	24	134

Out of 24 dead patients maximum deaths were in age group of 20- 29 and 30-39 years i.e. 8 in each age distribution

Discussion

Suicide is a self-inflicted death, and it can be defined as "choosing the mode, time, situation, or occasion for ending one's life."WHO defines Suicide as an “act of deliberately killing oneself”[1]. Deliberate Self- Poisoning (DSP) is one of the most common methods of suicide and is widely spread all over the world[5].

Poisonings form a major problem in developing countries, though the type of poison and the associated morbidity and mortality varies from one place to another and it may change over a period of time. In a developing country like India poisoning is a major health problem, though the type of poison and the associated morbidity and mortality varies from one place to another[45,46]. Suicidal poisoning with house-hold agents (Organophorous, carbamates, pyrethroids, etc.) is the most common modality of poisoning in India[6].

The majority of the patients were fully conscious and coherent when assessed at the emergency department. Attention seeking rather than suicidal intent is therefore a high possibility here. The low GCS observed in some of the DSP cases might be because of delayed arrival at the emergency department; however, this cannot be confirmed as the information on time intervals between the attempt and presentation was missing in the majority of files. The choice of substance might also have determined the GCS; central nervous system drugs, such as antiepileptic and antidepressant medication, may result in depressed levels of consciousness. Patients with underlying medical co-morbidities may already have a compromised organ system, and a tendency to deteriorate faster is therefore possible.

Conclusion

The outcomes of the study indicate that significant opportunities for reducing mortality exist by better medical management as first aid & by further restrictions on the most toxic pesticides. Strict rules must be followed regarding sale of pesticides. Pattern of poisoning in present study is more or less similar to the pattern found in most of the other studies.

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