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Study of Risk Factors Associated With Deliberate Self Harm By Organophosphorous Poisoning In A Teaching Rural Hospital In Karnataka

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Abstract
AIMS: *To identify the demographic characteristics of the subject and behavior of those admitted with deliberate self harm and formulate preventive measures*
METHODS: 200 consecutive subject with suspected Opganophosphorous poisoning between the ages 18 to 70 years where included in this study
The study was done at Adichunchanagiri institute of medical sciences and research centre, B.G Nagar between January 2020 and December 2020
RESULTS*: out of 200 subjects studied 120 were males 80 were females. alcohol dependence was found dominant in male subjects and depression was found dominant in female subjects*
CONCLUSION*: In males Alcohol dependence and in females depression following strained interpersonal relationship were the identifiable factors. Majority of the deaths occurred in those who presented late and those above 50 years.*
Identifying at risk population will reduce the number of admissions So also preventing easy access to the insecticides both at home and at near fertilizer and shop for DSH due to pesticides.

Keywords:
ER –Emergency room, DSH-Deliberate self harm, o.p. poisoning-organophosphorous poisoning , AIMS and RC – Adichunchanagiri institute of medical sciences and research centre

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I. Introduction:

Worldover DSH caused by pesticide consumption accounts for 30%of total suicides[10.] According to WHO one life lost every 40 seconds due to suicide[14] .According to national crime bureau of India suicide by consumption of pesticide account for 14.3%,14.4%,10.9% in the year 2012,2013 and 2014 respectively[15].Organophosphorous insecticidal DSH continues to be commonest form of DSH in number of studies. Out of total 306 cases of DSH ,200 were o.p. poisoning and 104 were non o.p. insecticidal DSH. Our aim was to identify demographic, social and behavioral variables in subjects of DSH and to recommend remedial measures to minimize the same

II. Material And Methods

The study population consisted of those subjects admitted to AIMS AND RC between January 2020 and December 2020

This cross sectional observational study included 306 consecutive subjects admitted to the hospital with history of consumption of insecticidal poisoning out of which 200 subjects with organophosphorous poisoning were taken up for this study. After obtaining approval from ethical committee and consent from the subjects and their attendants as per the protocol the demographic variables and socio economic status were recorded Psychiatric evaluation was done when subjects are shifted to the wards.

STATISTICAL ANALYSIS: Tools used in this study are

1.'z' test for quantitative variables2.Chi square for qualitative variable used in SPSS software and inferential statistics methodology is used to validate the data.3.Contingency coefficient test

III.RESULTS:

out of 200 subjects included in this study there were 6 deaths the demographic variables are given depicted in tables

All those who died during their hospital stay where presented late and majority of those are above 50 years. Males outnumbered females and the majority were between the age group 18 to 40 years.

TABLE 1
CHARACTERISTICS OF THE STUDY SUBJECT (No. 200)

1.Age in years		
18-30	92	46%
31-40	76	38%
41-50	24	12%
>50	8	4%
2.Gender		
Male	120	60%
Female	80	40%
3.Mortality		
Total	6	3%
Those below 40yrs	1	0.5%
Those above 6oyrs	5	2.5%
4.Time between consumption of OP poison and presentation to ER		
<4 hrs	190	95%
>4 hrs	10	5%
5.Occupation		
Students	10	5%
Unskilled worker	30	15%
Farmer,shop owner	90	45%
Home maker	70	35%
6.Marital status		
Single	50	25%
Married	130	65%
Widowed	20	10%
7.Type of family		
Nuclear	40	20%
Joint	150	75%
Living in old age facility	10	5%
8.Diagnosis by psychiatric colleagues		
DSM-III-R	66	33%
Alcohol dependence	30	15%
Adjustment disorder	28	14%
Impulsive behavior	76	38%

III. Discussion

We included 200 subjects in this study. Majority of those presented within 4 hours of consumption of OP compounds survived. Most of those who succumbed presented beyond 4 hours and required ventilator support.

Majority of the subject where between the age group of 18-40 yrs (86%)and only 5% where above 60yrs.These figures are comparable with those by J.Prasad[4] et [a9l],Anuradha bos[3] et al and Jose Thomas et [a1] van Der Hoek[10] et al,Selvaraj[15] et al

Males outnumbered females the death rate was 3% this can be compared with Eddeston et al[14].The social factors were as follows:5% where living in senior care facility.75% where in joint family,20% belong to nuclear family. Majority had access to OP compounds at home or at nearby shops.

DSM-III-R was the diagnosis(by colleagues from department of psychiatry)in one third of the patients followed by alcohol dependence in 15% ,adjustment disorder in 14%.this can be compared with similar figures by AP Rajkumar et al[13]

IV. Conclusion:

Majority of subjects were between 21 to 40 years and predominantly males, personal problems including unemployment ,financial burden and alcoholic dependence were found to be common causes. Out of 200 subjects studied 6 succumbed in the hopistal. Late presentation, respiratory failure, multi organ failure where found to be causes for adverse outcome.

In females depression,domestic violence, marital conflict,dishonor by inlaws, substance abuse by spouse were the most common causes.Identification of those at risk, family counselling,strict legislation for sale

and storage of pesticides including public education will go a long way in reducing DSH events.Integrated holistic care with sophistcted technical skill will reduce the mortality and morbidity.The lower mortality rate of around 3% in this study is due to aggressive treatment protocol followed (hit early and hit hard approach).
We recommend high level primary health care delivery system , and training activities to treat subjects committing DSH on emergency basis and shift them to the hospital after first aid including stomach wash wherever indicated
The remedial measures suggested are as follows:
1.psychiatric counseling of alcoholics and those with symptoms suggestive of depression
2.population based approaches that focus on schemes to meet basic human needs including creating local support groups within the vulnerable populations
3.improoved case management at primary care level and access to health services.
4. limit the toxicity of pesticides available in the market

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