

Deliberate Self Poisoning - Clinical and Etiological Profile in Rural Indian Government Hospital

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Abstract

Background: Deliberate self poisoning are commonly encountered cases at most of the rural Indian Government hospitals. Along with associated morbidity economic burden to the country is immense. Bread winners of family being affected at large scale has socio-economic impact on dependents.

Objective: To study the Clinical and Etiological profile of a patients presenting to emergency department in a rural Indian Government hospital with deliberate self poisoning.

Material and methods: This was conducted in a rural government district hospital Chamarajanagar, over a period of one year. A total number of 156 patients aged more than 15 years of both genders were included. After initial resuscitation and antidote treatment along with other symptomatic treatment. Detailed history, clinical examination and nature of poisonous material was studied. Psychiatric counselling was done before discharge. Accidental and homicidal poisoning patients were excluded.

Results: Out of 156 patients 94 were males (60.25%) and 62 were females (39.79%). Among males age group between 35 to 45 years were most common (38.2%), where as in females age group between 25 to 35 years were most common (38.7%). At extreme age group i.e. between 15 to 25 years and more than 65 years percentage of female patients outnumbered male counterpart. Among clinical symptoms generalised weakness and altered sensorium was most common and Constricted pupil was the most common sign.

Conclusion: Deliberate self poisoning leads to significant morbidity and mortality among rural population. Limiting easy access to poisonous material through government regulations and policies and increasing the public awareness about its ill effects through health education needed.

Keywords: Deliberate Self Poisoning; Easy Access; House Hold Pesticides; Organo Phosphorous Compound.

Introduction

Deliberate self-poisoning is voluntary self-ingestion of a substance in excess of any prescribed or generally recognized therapeutic dose irrespective of the apparent purpose of the act [18]. Deliberate self poisoning is one of the important cause of morbidity and mortality among patients presenting to emergency ward. The pattern of poisoning in developing country like India is related to illiteracy, poverty, occupation and easy access to poisonous material [1] Agriculture being the most

important occupation among rural India people have easy access to organo-phosphate compounds. Rat killers, ant and termite killer pesticides are sold over the counter [2]. Drugs like Pain killers and antibiotics besides being sold over counter are the most self medicated compounds.

Alcohol has gripped the younger earning population as government gives freebies for other livelihood. The pattern of deliberate self poisoning varies between urban and private health care system compared to rural and government setup due to huge socioeconomic and cultural differences among

rural and urban India. Periodic epidemiological and clinical studies are necessary to understand the pattern of poisoning in each region [3]. Awareness regarding pattern of deliberate self poisoning in a region, its severity, clinical presentation, early diagnosis, and prompt treatment along with health education is necessary.

Material and Methods

This study was undertaken to assess the clinical and etiological pattern of Deliberate self poisoning in a rural health setup. Most cases of deliberate self-poisoning present to general hospitals [21]. Patients aged more than 15 years of both gender who presented to hospital over one year from September 2017 to August 2018 were attended in emergency. After initial resuscitation, gastric lavage (expect corrosives) and antidote therapy, detailed clinical examination was done. Presenting symptoms and obvious clinical signs were noted. Attempt was made to enquire into type of poison by history, smell, recovered sample or bottle or container from which poison was used. Referral letter and other corroborative and circumstantial evidences also helped to gather details of nature of poison. During study treatment guidelines were unaltered and patients treated accordingly. Psychiatric counselling and treatment was given for depression, suicidal tendencies and other mental illness found.

Observations and Results

Out of 156 cases of studied during one year period and we observed that males were more than females, of which age distribution showed more number of cases between 35 to 45 years in males where as it was 25 to 35 years among females. At extreme age group percentage female cases outnumbered the males counterpart. These findings were in accordance with studies conducted by Dhattar was S.K et al. [4] and Kumar T.S et al. [5]. Buykx et al. found that the majority of patients were female in their 30s [15].

Table 1: Age distribution table

Age group	Males (94) 60.25%	Females (62) 39.74%
> 15 – 25	7 (7.44%)	6 (9.67%)
25 – 35	13 (13.82%)	24 (38.70%)
35 – 45	36 (38.20%)	12 (19.35%)
45 – 55	18 (19.1%)	06 (9.67%)
55 – 65	12 (12.7%)	08 (12.90%)
>65 years	8(8.5%)	6 (9.67%)

History taking and clinical examination of patients allowed us to analyse different symptoms and clinical signs of which generalised weakness and altered sensorium was most common symptom. Constricted pupil was commonest sign. The spectrum of clinical presentation varies according to type of agent ingested or inhaled [6,7,8] (Table 1).

Table 2: Distribution of Symptoms and Signs

1	Generalised weakness and drowsiness	34 (27.1%)
2	Giddiness	8 (5.12%)
3	Vomiting and nausea	13 (8.33%)
4	Blurring of vision	5 (3.2%)
5	Itching in throat	7 (4.48%)
6	Excess salivation and difficulty in swallowing	8 (5.12%)
7	Watching from eyes	3 (1.92%)
8	Stomach pain	10 (6.41%)
9	Breathing difficulty	5 (3.2%)
10	Tachycardia	5 (3.2%)
11	Shock	8 (5.12%)
12	Constricted pupil	13 (8.33%)
13	Brady cardia	9 (5.76%)

Pattern of poisoning was listed and We noticed that organophosphorus compound poisoning was more, followed by house hold pesticides among which mosquito repellents, ant killing powder, termite killing powder and rat poison were common. In the mid-1990s, Buckley et al. reported that benzodiazepines, alcohol, and paracetamol figured highly in the most common substances ingested. Tricyclic antidepressant (TCA) poisoning was also common and responsible for a substantial proportion of DSP-related deaths in this study [16] Organophosphorus (OP) Poisoning were Commonly occurring from areas with the agriculture as major occupation of people. Many studies have reported OP was most common among all the poisoning. Increased incidence of OP compound poisoning are mainly due to easy accessibility, illiteracy and lack of purchase restriction and strict government legislation on its sale [9,10,11] (Table 2). Cock tail of tablet consumption was more among patients who were either suffering from chronic illness like Diabetes, Epilepsy, hypertension, thyroid disorders or a close relative of a patient who had easy access to drugs in home. Eight cases of artificial cow dung powder poisons were noted exclusively among female house wives. cow dung powder is used for cleaning and smearing in home with mud floors [12]. Alcohol intoxication was common among young males along with tablet consumption. corrosives and toilet cleaner consumption was also noted.

Table 3: List of different poisonous compounds

Organophosphorous compounds	48 (30.76%)
Pesticides – Mosquito repellants Ant, Bug , termite killer	25 (16.02%)
Rat killer	7 (4.48%)
Oral drugs / cocktail of tablets (NSAIDS, OHA's, anti epileptics Thyroxine sodium, anti psychotics, anti hypertensives	20 (12.82%)
Alcohol intoxication	6 (3.84%)
Alcohol with cocktail of tablets	7 (4.48%)
Corrosives – acids, alkali and detergents	12 (7.69%)
Phenyl and bleaching powder	8 (5.12%)
Cow drug powder	8 (5.12%)
Plant seeds	2 (1.28%)
Plant micro nutrients	4 (2.56%)
Alluminium phosphide	5 (3.20%)

Clinical outcome depends on various factors like dose consumed, time interval of initiation of treatment and availability of level of medical care [13,14] (Table 3).

Conclusion

Most of our cases were young individuals and commonest poison consumed was OP compound. Altered sensorium was the most common clinical presentation. Easy accessibility to poisonous material and restrictions on their sale needs to be legally addressed to minimize the incidence of deliberate self poisoning. Early diagnosis and appropriate treatment along with adequate knowledge about clinical spectrum of poisoning in rural population is of paramount importance. Psychiatric counselling mental support and health education are necessary to prevent future re-occurrence thereby decreasing morbidity and mortality. There are significant regional differences as well as similarities of risk factors contributing to deliberate self-poisoning. Understanding these differences will lead to formulation of culturally sensitive prevention strategies [19].

Key message

Deliberate self poisoning is one of the common causes of morbidity and mortality in rural India. Easy accessible poisonous materials are commonly used. Health Education and government policies to curb sales and availability are need of the hour.

References

- Batra AK, Keoliya AN, Jadhav GU. Poisoning: An Unnatural cause of morbidity and mortality in rural India. *J Assoc Physicians India*. 2003 Oct;51:955-9.
- Aaron R, Joseph A, Abraham S, Muliyl J, George K, Prasad J et al. Suicides in young people in rural southern India. *Lancet*, 2004;363:1117-8.
- Mukul Joshi & Divyesh Kumar V Patel. A study on Clinical profile of patients with acute poisoning. *J Med Sci*. 2015 Dec;4(2):132-34.
- Dhattarwal SK, Singh H. Profile of death due to poisoning in Rohtak, Haryana. *J Forensic med Toxicol*, 2001;18:28-29.
- Kumar TS, Kanchan T, Yoganarasimha K, Kumar G P. Profile of unnatural deaths in manipal, south india 1994-2004. *J Forensic Med*, 2006;13:117-20.
- Riaz muhammad, Muhammad Abur Rahaman Afridi, Zafar Ali, Muhammad Asghar et al. Etiological and clinical profile of patients presenting with acute poisoning to a teaching hospital. *J postgrad Med Inst* 2018;32(1):54-9.
- Hu YH, Chou HL, Lu WH, Huang HH, Yang CC, Yen DH et al. Features and prognostic factors for elderly with acute poisoning in the emergency department. *J Chin Med Assoc* 2010;73:78-87.
- Khurram M, Mahmood N. Deliberate self-poisoning: Experience at a Medical Unit. *J Pak Med Assoc* 2008; 58:455-7.
- Ather NA, Ara J, Khan EA, Sattar RA, Durrani R. Acute organophosphate insecticide poisoning. *J Surg Pak* 2008;13:71-4.
- Ahuja H, Mathai AS, Pannu A, Arora R. Acute poisonings admitted to a Tertiary Level Intensive Care Unit in Northern India: Patient Profile and Outcomes. *J Clin Diagn Res* 2015;9:UC01-4.
- Indu TH, Raja D, Ponnusankar S. Toxicoepidemiology of acute poisoning cases in a secondary care hospital in rural South India: A five-year analysis. *J Postgrad Med* 2015;61:159-62.
- Krishnamoorthy A, Subramanian R, Dhanaselvi P, Prabhu RS, Jayanthi V. Clinical presentation of cow dung powder poison – A preliminary communication. *J Assoc Physicians India*. 2001:49.
- Sena Nayake N. and Petris H. Mortality due to poisoning in a developing and agricultural country, Trends over 20 years. *Hum Exp Toxicol*. 1995 Oct;14(10):808-11.
- K.N. Ramesha et al. Pattern and Outcome of Acute Poisoning Cases in a tertiary care hospital in Karnataka, India. *Indian J Crit Care Med*. 2009 Jul-Sep;13(3):152-155.
- P. Buykx, P. Dietze, A. Ritter, and W. Loxley. Characteristics of medication overdose presentations to the ED: how do they differ from illicit drug overdose and self-harm cases? *Emergency Medicine Journal*, 2010;27(7):499-503.
- N.A. Buckle, I.M. Whyte, A.H. Dawson, P.R. McManus, And N.W. Ferguson. Self-poisoning in Newcastle, 1987-1992. *Medical Journal of Australia*, 1995;162(4):190-93.

17. Hawton K, Rodham K, Evans E, et al. Deliberate Self-harm in Adolescents: self-report survey in schools in England. *BMJ* 2002;325:1207-11.
 18. Radhakrishnan R, Andrade C. Suicide: an Indian Perspective. *Indian J Psychiatry* 2012 Oct-Dec;54(4): 304-19.
 19. Morey C, Corcoran P, Arensman E, Perry IJ. The Prevalence of Self-reported Deliberate Self-harm in Irish adolescents. *BMC Public Health* 2008;8:79-86.
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