

Clinical profile of poisoning cases admitted to intensive care unit at tertiary health care centre

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Abstract

Introduction: Poisoning, organophosphorus and snake bite, both are commonly encountered in rural areas of India. Acute poisoning is an important cause of morbidity and mortality. The widespread use of organophosphorus agents in agricultural purposes as pesticides and in domestic as household insecticide has made it an easy available all-purpose poison. Aims and **Objectives:** To study Clinical Profile of Poisoning Cases Admitted to Intensive Care Unit at Tertiary Health Care Centre **Methodology:** The present study was carried out in intensive respiratory care unit, Department of respiratory diseases and tuberculosis Govt. medical college and SGGs Memorial Hospital Nanded during 29th Feb. 2004 to 29th June 2005. The study includes patients of acute poisoning including organophosphorus and snakebite and those who needed artificial respiratory support. We studied 76 patients in IRCU of acute poisoning both organophosphorus and snakebite. **Result:** The patients in the present study were between the age of 12-60 out of 76 patients, maximum patients were in the age group of 21-30 yrs. (32.89%), followed by 12-20 years (25%), 31-40 yrs (21.05%). 78.8% were below 40 yrs. Age which forms young age group. Comparatively males were more common victims than female in present study. Males of Female Ratio: 1.81. Among 76 patients of respiratory failure, acute respiratory failure was seen in 64 patients (84.21%) % sub acute respiratory failure seen in 8 patients (10.52%) and 4 patients of intermediate syndrome (5.26%). Type-II respiratory failure was seen in all Neuroparalytic patients. In OPC Type-I R.F. was seen in 41 patients (73.21%). **Conclusion:** OP Poisoning was most common type of Poisoning and predominantly in Males and Respiratory failure was the most common complication.

Key words: Organo-phosphorus Poisoning, Snake Bite, Respiratory Failure.

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INTRODUCTION

Poisoning, Organophosphorus and snake bite, both are commonly encountered in rural areas of India. Acute poisoning is an important cause of morbidity and mortality. The widespread use of Organophosphorus agents in agricultural purposes as pesticides and in domestic as household insecticide has made it an easy available all-purpose poison. Hence it is commonest

suicidal and less commonly accidental poison encountered in rural and district hospitals. Poisoning is an important health care problem in developing countries, resulting in hospitalization, utilization of health care resources and high mortality. According to the World Health Organization (WHO), 0.3 million people die due to various poisoning agents annually¹. Each year, 500,000 suicidal deaths are reported to occur in rural Asia, of which 200,000 are due to organophosphates (OP) poisoning alone². Acute pesticide poisoning with agents like aluminium phosphide (ALP) and organophosphate poisonings (OPP) is very common in North India as majority of people are farmers³. 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^{4,5}. Suicidal poisoning with house-hold agents (OPs, carbamates, pyrethroids, etc.) is the most common modality of poisoning in India⁶. Thus a detailed knowledge about the nature, clinical profile and severity of presentation from acute poisoning

is not only important for early diagnosis and prompt treatment but is also essential for triaging patients appropriately and developing predictive scores to reliably prognosticate outcomes. Typically males are more vulnerable to deaths from poisonings than females, with several studies reporting twice as many deaths in them⁷. This trend is reflective of the greater stress and strain, occupational hazards and the better accessibility of poisons to them⁸. The incidence of deaths due to poisoning has steadily increased in the recent past and has reached a level, where it can be called as “social calamity”, Sharma B.R.-1994¹⁶. Easy availability, rapidity of action and high mortality at peak moments of frustration has added fuel to the fire and pushed up the suicidal poisoning. Organophosphorus compounds form an important public health problem especially in developing countries and rural populations. The commonest mode of death in acute organophosphorus poisoning is acute respiratory failure. If timely intervention is done with respiratory supports in the form of mechanical ventilation in an intensive respiratory critical care unit the mortality is reduced. Snake bite is one of the commonest causes of morbidity and mortality especially in tropical countries like India. There are more than 35,000 species of snakes, but only 250 are venomous. In India about 216 species are found, of which 25 are poisonous. [C.K. Parikh]²

Clinical Features: Clinical Evidence of Hypoxaemia or type I respiratory Failure. Hypoxaemia results in central cyanosis which is best assessed by examining the oral mucous membranes. Since blood flow at this site is well “maintained when the periphery may be constricted. “the relationship between cyanosis and hypoxaemia is notoriously variable and there is considerable observer variation. Cyanosis is more easily observed in polycythemic patients whereas anaemic patients there may be insufficient reduced haemoglobin to give a blue colour. Common signs and symptoms of hypoxaemia are: Judgment and personality changes. Confusion, stupor, coma, Headache, Tachycardia, bradycardia, Cardiac arrhythmias, Hypertension (systemic or pulmonary), Hypotension, Tachypnoea, dyspnoea, Modes of detection of Hypoxaemia, Arterial PO₂ on arterial blood gas analysis, Oximetry.

METHODOLOGY

The present study was carried out in intensive respiratory care unit, Department of respiratory diseases and tuberculosis Govt. medical college and SGGH Memorial Hospital Nanded during 29th Feb. 2004 to 29th June 2005. The study includes patients of acute poisoning including organophosphorus and snakebite and those who needed artificial respiratory support. We studied 76 patients in IRCU of acute poisoning both

organophosphorus and snakebite. Organophosphorus compound poisoning patients who were likely to require ventilator support. Establishment of diagnosis of organophosphorus poisoning was made on: The consistent history of suicidal/ accidental ingestion of poison by patient him/herself or by relatives. By confirming with empty bottle or container of poison (brought by relative) Typical clinical features and manifestations of organophosphorus poisoning e.g. increase salivation, increase incontinence, frothing from nose, mouth, vomiting, loose motions, in a drowsy, restless, anxious and altered sensorium patient with pinpoint pupils, bradycardia or tachycardia. Typical garlic like smell of froth, vomiting and Ryle’s tube aspirate. Rapid clinical response to intravenous atropine sulfate injection and pralidoxime (2PAM) injection were included in the study. All patients at presentation were evaluated in detail and those acutely ill were treated intensively to secure airway, oxygenation and cardiac support. The establishment of respiratory failure was made on the basis of¹ clinical criteria and² arterial blood gas analyses. Acute respiratory failure was said to exist when respiratory failure developed in a patient within 24 hrs. of poisoning.

RESULT

The present study was carried out in the department of respiratory disease and Tuberculosis at Govt. medical college and Shri Guru Govindsinghji Memorial Hospital Nanded since 29.02.2004 to 29.06.2005. The patients of organophosphorus compound poisoning and snake bite who required assisted ventilations were included in this study. The present study includes 76 patients of both organophosphorus compound and snake bite poisoning admitted in intensive respiratory critical care unit.

Table 1: Distribution of the Patients as per Type of Poisoning

Total No. of organophosphorus compound poisoning admitted in I.C.U	Total No. of Neuroparalytic snake bite pts. Admitted in I.C.U
147	82

Table 2: Distribution of the Patients as per Age

Age Group (Yrs.)	OP-Poisoning	N. Snake Bite	No. Of cases	Percentage
12-20	13	6	19	25.00%
21-30	20	5	25	32.89%
31-40	11	5	16	21.05%
41-50	9	2	11	14.47%
51-60	3	2	5	6.57%
Total	56	76	76	100%

The patients in the present study were between the age of 12-60 out of 76 patients, maximum patients were in the

age group of 21-30 yrs. (32.89%), followed by 12-20 years (25%), 31-40 yrs (21-05%). 78.8% were below 40 yrs. Age which forms young age group.

Table 3: Sex Distribution

Sex	OPC Poisoning	N.Snake Bite	Total No.of Cases	Percentage
Male	39	10	49	64.47%
Female	17	10	27	36.53%
Total	56	20	76	100%

Comparatively males were more common victims than female in present study. Males of Female Ratio: 1.81:

Table 4: Respiratory failure:

Type of respiratory failure	No. of Patients	Percentage
Acute respiratory failure	64	84.21%
Subacute respiratory failure	8	10.52%
Intermediate syndrome	4	5.26%

Among 76 patients of respiratory failure, acute respiratory failure was seen in 64 patients (84.21%) % subacute respiratory failure seen in 8 patients (10.52%) and 4 patients of intermediate syndrome (5.26%)

Type of poisoning	Type-I RF		Type-II RF	
	No. of cases	%	No. of cases	%
OPC	41	73.21%	15	42.85%
Snake bite	0	0.0%	20	57.15%
Total	41	100.0%	35	100.0%

Type-II respiratory failure was seen in all Neuroparalytic patients. In OPC Type-I R.F. was seen in 41 patients (73.21%) and

DISCUSSION

The majority of our patients belonged to the age group of 20-40 years, the most active and yet the most vulnerable to stressors like examination failure, unemployment, marital problems etc^{9,10}. As reported by many national and international studies on acute poisoning, we also found that most acute poisonings were suicidal¹¹ and commonly employed the oral route¹². One of the major causes of death in rural and agricultural areas across the world is acute pesticide poisoning^{3,13} with developing countries reporting high fatality rates from poisoning following pesticide consumption. The most commonly employed pesticides in India are organophosphorus compounds and aluminium phosphide compounds¹⁴⁻¹⁶. In the present study age group ranged between 12 years to 60 years. In organophosphorus poisoning maximum No. of patients were in third decade (21-30 yrs) comprising of 35.71% 12.20 years and 19.64% in the age group of 31-40 years

(11 patients) most of patients 78.56% were below 40 years of age which forms the young age group and is comparable to study by Singh *et al*(1984)⁴ Maximum No. of patient were in age group of 12-20 years, comprising of 30% (6 patients) Followed by age group of 21-30 years and 31-40 years comprising of 25% (5patients) each the study is comparable to R.K. Saini (1984)³ Out of 56 patients of OP poisoning there were 39 males (69.64%) and 17 (30.36%) females in the present study. The male predominance was seen in our study.

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