ACUTE POISONING - A REVIEW OF 1900 CASES

Pages with reference to book, From 131 To 133

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ABSTRACT

A review of nineteen hundred cases of acute poisoning admitted to the Intensive Care Unit shows that poisoning was responsible for 40% of the emergencies treated at this Unit, between 15th January, 1976 to 15th November, 1985. Comparing our data with Western figures, it was noted that the pattern of poisoning in our Country is considerably different from that in the West. Organophosphorus Insecticide Poisoning was by far the commonest in our series and was responsible for the majority of fatal cases. Over-all mortality rate for all the other poisons excluding Organophosphorus Insecticide compared favourably with Western figures, being 1.8% (JPMA 40:131, 1990).

INTRODUCTION

Acute poisoning forms an important and major group of emergencies treated in the department of Intensive Care at the Jinnah Postgraduate Medical Centre, Karachi and was responsible for 1900 of the 4738 patients treated in the unit over a ten year period. The pattern of poisoning in our country differs from that in the Western Countries. In our Country Organophosphozus Insecticides[1] take the lead by a great majority, in the west it is the tranquilisers, hypnotics and sedatives which are most frequently used in self poisoning. The pattern of poisoning has an important bearing on management and prognosis. Whereas most of the cases of self-poisoning can be treated without resorting to the use of specialized forms of treatment such as artificial ventilation; OPI poisoning cases more often required such treatment. Moreover, the over mortality rate from OPI poisoning was much higher than that from all other poisons. The Intensive Care Unit at Jinnah Postgraduate Medical Centre which has now been made a poison control and reference centre, consists of an Intensive therapy Section .of eight beds and a Progressive Patient Care Unit of sixteen beds. The treatment facilities in the unit consist of Cardiac monitoring, defibrillation and artificial ventilation. On the investigative side beside routine investigations, facilities for blood gases analysis and examination of poison levels have been made available recently.

MATERIAL AND METHODS

Nineteen hundred cases were included in this study. Most of them were initially assessed in the casualty department where gastric lavage and induced emesis were given when indicated, in addition to other resuscitative measures. The patients were brought to the casualty department by relatives, friends and the police or were referred by the family physicians. Detailed clinical data were recorded and they were classified into three groups suicidal, accidental and homicidal.

RESULTS

Analysis of the data of 1900 cases is presented here.

Age/sex and Marital Status

Most of our cases i.e. 1466 (77%) were between the ages of 11-30 years. There were one thousand and three (52.8%) females and eight hundred and ninety seven (47.2%) males. Of the females, 66% were married and 34% unmarried; whereas, of the male, 74% were unmarried and 26% were married. It is

intresting to note that the majority of cases occured in married females and unmarried males.

Socio-economic Group

62% of our cases belonged to the low income group and 38% to the average and high income group. Studying the pattern of poisoning in different socio-economic groups, it is noted that the majority of patients in the low income group (95.6%) used Organophosphorus insecticides; whereas, the majority (72%) in the high income group resorted to tranquilisers, sedatives and hypnotics as a mode of poisoning. 525 (58.5%) of the males were educated, whereas 233 (23%) of the females were professionals. Accidental poisoning as an occupational hazard occured in 3% of our cases, most of whom were fumigators or porters, handling insecticides.

Reasons for taking the Poison

70% of the cases were suicidal or parasuicidal, 21.5% accidental and 1.8% homicidal. Of the suicidal cases 1305 were first attempts and 25 had made more than one attempt. 15% of these cases were under psychiatric treatment and 3% were suffering from an associated organic disease.

Poisons taken

TABLE I. Reasons for taking poisons.

Type of poisoning	No. of cases	percentage
Suicidal/parasuicidal	1330	70%
Accidental	408	21.5%
Homicidal	31	1.6%
Cause could not be elicited	131	6.9%

Suicidal cases 1330 — First Attempt 1305; More than 1 attempt 25

Reasons	No. of cases	Percentage
Negligence by husband	460	34.6
Failure in love affairs	356	26.6
Conflict with parents	227	17
Financial problems	104	8.2
Conflict with spouse	40	3
Conflict with Inlaws	27	2
Due to illness	42	3.15
Sterility	1	0.3
Fear of crime	1	0.3
Unknown	42	3.15

106 (15.07%) were under Psychiatric Treatment.

Table II. Poison Taken.

Poison	No. of Cases	Percentage
Organophosphorus Insecticides	755	39.7
Tranquilisers	404	21.2
Sedatives and Hypnotics including opiates	182	9.5
Antidepressants	109	5.7
Kerosene & Petroleum	117	6.5
Datura	76	4
Copper Sulphate	64	3.4
Corrosives	43	2.3
Alcohol	24	1.3
Miscellaneous (Poisonous gases, salicylates, heavy metals)	85	4.5
Unknown	41	2.1

Table II shows that the frequency and the type of poisons taken by our patients. By far the commonest poisoning encountered was that of Organophosphorus insecticides followed by tranquilisers mainly ben¬zodiazepines, sedatives and hypnotics including opiates, and antidepressants (Tricycic group).

TABLE - III. Comparative figures of poisoning in various studies.

Survey Period	No. of patients	Barbiturates sedatives hypnotic (%)	Tranquilisers (%)	Antidepressants (%)	Salicylates (%)	Alcohol (%)	Coal Gas and Poisonous Gases (%)	Insecticides (%)	Petroleum solvents (%)	Heavy Metals (%)	Datura (%)	Copper Sulphate (%)	Corrosives (%)
Kessel 1964 (U.K.)	522	55	–	–	12	–	9	–	–	–	–	–	–
Lawson Mitchell 1966-71 (U.K.)	749	33.09	15.3	10.68	10.3	16	2.6	–	–	–	–	–	–
Smith 1966-71 (U.K.)	250	29.6	20	6.8	10.8	–	–	–	–	–	–	–	–
Deptt. Health 1970 (U.K.)	–	24.3	31.8	11.9	32	–	–	–	–	–	–	–	–
National Clearing House for poison information centre 1972 (USA)	–	23.8	3.5	–	19.8	6.5	–	1.9	–	2.3	1.3	–	–
Present series (Jan 76 to Nov 85)	1900	9.5	21.2	5.7	1.1	1.3	1.1	39.7	6.5	0.5	4	3.4	2.3

Table III gives a comparative study of our figures with those of Western Countries. When we compare our figures with those from Western series, we note that hardly any cases of Organophosphorus Insecticide Poisoning have been reported in these studies, where the lead is taken by sedatives, hypnotics and tranquilisers followed by an¬tidepressants, salicylates and alcohol.

State of Consciousness on Arrival

At the time of admission 85% of the patients were unconscious and 15% conscious. Of the former 56% were in grade-I, 183% in grade-II, 12.5% in grade-Ill, and 13% in grade-N coma.

Diagnosis

Diagnosis was based on the history, as given by the relatives or the patients after recovery in 95% cases, characteristic clinical pattern of poisoning in 60%, naked eye examination of stomach contents in 10% of cases, drug prescriptions or bottles and containers brought by the relative in 7.6% of cases. Cholinesterase levels were done in a few of the cases of Organophosphorus Insecticide Poisoning.

Clinical Pattern of Common Poisons encountered (Table IV)

TABLE IV. Clinical Pattern of Common Poisons encountered.

Pattern	Poisons commonly involved
Restlessness, Weakness, Miosis, Muscular Twitching, Excessive Sweating and Salivation, Bradycardia, Pulmonary Oedema	Organophosphorus Insecticides
Coma, Hypotension Flaccidity	Benzodiazepine Barbiturates Opiates (Miosis) Glutethimide (Mydriasis) Ethanol (Miosis)
Coma, Hyperfelexia Tachycardia	Tricyclic Antidepressants Anticholinergic Agents (Datura plant) Phenothiazines Methaqualone
Restlessness, hypertonia Hyperreflexia Pyrexia	M.A.O. Inhibitors (Hypertensive Crisis) Anticholinergic agents .(Datura plant) strychnine
Burns in Mouth, Dysphagia, Abdominal Pain.	Corrosives/Caustics

The typical clinical features of parasympathetic over activity are very characteristics of Organophosphorus Insecticide Poisoning. This can be confirmed by resistance to atropinisation by a therapeutic dose of Injection Atropine and low serum Cholinesterase levels.

Management

General management of these cases is shown in Table V.

TABLE V. Management of Poisoning.

GENERAL	
Observation of vital parameters	Half hourly BP & T.P.R. Neurological status chart ECG Monitoring intake output chart
Respiratory Complications	Patent Airway, suction endotracheal intubation Artificial ventilation Oxygen therapy Respiratory stimulants
Shock	Parenteral fluid therapy vasopressors (Dopamine)
Secondary Infection	Antibiotics
Nutrition	Intravenous feeding Nasogastric feeding
Care of Bladder & Bowl	– – – – – –
Prevention of Bed sores	Change posutre three hourly

Immediately the patient is received by us, an attempt is made to empty the stomach by emesis, or gastric lavage when the patient is unconscious or emesis contraindicated. In order to enhance elimination of the poison we have done forced alkaline diuresis in cases of phenobar¬bitone and salicylate poisoning with good results. Specific antidotes were given immediately when indicated (Table VI).

TABLE VI. Specific antidotes used.

Poison	Antidote
Organophosphorus Insecticides	Atropine Cholinesterase Reactivators Pralidoxime (Toxogonin)
Narcotis (Opiates)	Nalaxone Nalorphine
Heavy Metals, Lead, Copper Mercury	Dimercaprol (B.A.L.)
Methanol	Ethanol
Severe Hypertension due to monoaminoxidase inhibitors	Phenoxybenzamine
Anticholinergic drugs including Datura poisoning	Neostigmine
Coumarine and inanedione anticoagulants	Vitamin K

Results

Out of the total of 1900 cases 1793 (94.4%) recovered, 107(5.6%) expired. Of those 107 who expired the majority 72(3.8%) were cases of Organophosphorus Insecticide. A significantly higher mortality rate is seen in cases of Organophosphorus Insecticide Poisoning. Of the 1793 patients who recovered 1216 (70%) were referred to the neuro-psychiatry out-patients department, 200 (11.15%) were referred to the social workers, 41 (2.3%) were transferred to the neuropsychiatry ward and 296(16.5%) were discharged without referral.

DISCUSSION

The pattern of poisoning in our country is very different to that in the West. Organophosphorus Insecticide form a major proposition of cases admitted with acute poisoning and their incidence has increased at an alarming rate from 34% in 1979 to 48% in 1981 to 63% in 1985. The mortality rate of Organophosphorus Insecticide Poisoning though significantly reduced than in our earlier studies, is still twice as high as that from other poisons. In our experience intensive care alone is sufficient in the

management of most cases of acute poisoning. In view of the increased incidence of Organophosphorus Insecticide Poisoning, its higher mortality rate and the greater need for sophisticated and expensive ventilatory support, restriction on the sale of insecticides may reduce the frequency of poisoning.

REFERENCES

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