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CLINICAL PROFILE OF 50 CASES OF ORGAN PHOSPHORUS POISONING WITH VENTILATION SUPPORT ADMITTED IN GGGH, JAMNAGAR.

General Medicine

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KEYWORDS

Sucide, Mechanical Ventilation.

INTRODUCTION

As we have entered a new millennium, Production and usage of various chemicals, drugs and insecticides are increasing day by day. India, too is developing fast and is not left behind much in industry and agriculture. Since last three decades organ phosphorus compounds has become one of the most commonly used insecticides.1 They have increased the agricultural fields to reach the new heights. Now a days, their indication are not limited in field of agriculture but also used to kill household insects which are the source of very common and fatal diseases.

MATERIALS AND METHODS

This study will include cases of Organophosphorus poisoning with ventilation support during the period of one year in GGH, Jamnagar.

Detailed history regarding age, sex, residence, marital status, occupation, socioeconomic status will be taken.Symptoms and clinical signs at the time of admission will be taken into account. Complications due to the poisoning and the outcome (discharged/ expired) will also be taken into account.

Detailed information regarding the route of intake, amount, mean time delay, type of compound, nature of poisoning whether accidental orsuicidal will be considered.

Also there will be some investigations like serum cholinesterase, blood glucose level, hemogram, renal function test, electrocardiogram, chest roentgenogram.

Type of study: a cross sectional study.
Study population: 50 cases of organophosphorus poisoning with ventilation support admitted in ggh, jamnagar.
Period of study: 12 months
Sample size: 50 case
Sampling procedure: simple random sampling

Inclusion criteria: all the patients admitted in ggh,jamnagar having a history of exposure to organophosphorus compound with ventilation support.

EXCLUSION CRITERIA:

1) Patients having history of poisoning from other than Organopho sphorus compound.
2) Patients who have been affected simultaneously by some other compound along with an Organophosphorus compound.
3) Patients who have come to GGH,Jamnagar after taking treatment at some other health institution for more than 12 hrs.

RESULT

During the duration of 1 year, 50 cases of OP poisoning were admitted in Government Hospital.

Table – 1 Age incidence

Age in Years	No of cases	%	Complications		Expired	%
			OP	Ventilator		
11-20	12	24	03(25%)	01(8.3%)	02	16.66
21-30	16	32	08(50%)	02(12.5%)	07	43.75
31-40	12	24	04(33.3%)	02(16.66%)	06	41.66
41-50	07	14	00(0%)	01(14.28%)	01	14.28
51-60	02	4	01(50%)	00(0%)	00	00
>60	01	2	00(0%)	00(0%)	00	00

TABLE - 2 Intention of poisoning

Intention	No of cases	%	Complications		Expired	%
			OP	Ventilator		
Suicidal	41	82	13(31.7%)	05(12.19%)	13	31.70
Accidental	09	18	03(33%)	01(11.11%)	03	33.33
Homicidal	00	00	00(0%)	00(0%)	00	0

TABLE - 3 Blood acetylcholinesterase level activity and relation to mortality

Serum cholinesterase (IU/ml)	No of cases	%	Complications		Expired	%
			OP	Ventilator		
<1000	10	20	04(40%)	03(30%)	06	60
1000-2500	27	54	09(33.3%)	01(3.7%)	06	22.22
>2500	13	26	03(23.07%)	02(15.38%)	04	30.76

Table 4 Days of artificial ventilation and related outcome.

Days of Artificial Ventilation	No of cases	%	Complications		Expired	%
			OP	Ventilator		
<7 days	31	62	05(16.12%)	00(0%)	05	16.12
7-14 days	15	30	09(60%)	04(26.6%)	08	53.33
>14 days	04	08	02(50%)	02(50%)	03	75

DISCUSSION

In India O.P. compound poisoning is the commonest poisoning encountered because it is widely used as an insecticide and easy availability. O.P. compound is highly toxic and associated with high mortality. The poisoning by O.P. compound is increasing day by day. Today O.P. compound poisoning is number one amongst poisoning and mortality.[2]

In present study it is evident from above table that the peak incidence was in the third decade (32%) followed by second decade (24%) which is incidentically comparable with previous series.

Gupta, DESc, Mutalik and CHA study noted in their study that poisoning due to O.P. compounds in is mainly due to suicidal intention. Incidence of poisoning due to accidental ingestion stands second to suicidal intention.[3,4,5,6]

Present study is comparable to other Indian studies where suicidal intention is high. In present study suicidal intention present in 82% cases and accidental poisoning was noted in 18%.

O.P. compound known to give rise many complications amongst these respiratory failure, peripheral circulatory failure and cardiac failure are the commonest. Acute neurotoxic effect during the cholinergic phase of O.P.C. poisoning and delayed neurotoxic effect appeared 2 to 3 weeks later were recognised. Senanayake[7] had described paralysis of proximal muscle, neck flexor, motor cranial palsies and respiratory muscle weakness after 29 - 96 hours of O.P.C. poisoning. These symptoms were lasted upto 18 days. He also described delayed development of polyneuropathy[8,9,10]. A delayed form of neurotoxicity also described by Wadiaet al.[11] He described this as type II paralysis. Type-II paralysis is not at all uncommon occurring in 20% of cases. He described type-II paralysis as an intermediate syndrome.

Type-I paralysis being present on admission or occuring within first 24 hours after O.P.C. intoxication. V.R. Joshi and G.S. Sainani described

same complication, intermediate syndrome or type-II paralysis in their study.[12]

GBS like syndrome as a sequelae of O.P.C. poisoning described by A. Adlakhaet al[46] and Fisher J. R.[13]. Mental illness was described by A. Stoller due to chronic O.P. compounds intoxication [14]. Hypoglycemia was reported by ZdenckHyubanet al[15].

It is evident from below table that O.P.C. poisoning known to give rise to any complications, as mentioned above. All of above studied had reported cases of such complications.

Final outcome

Author's series	Recovered	Absconded	Died
Mutalik[6]	92.00	-	8.00
DESc[8]	97.70	-	2.30
Belani[12]	94.00	-	6.00
Mehta[13]	92.00	-	8.00
Kabrawala[16]	90.70	-	9.30
CHA study[14]	89.50	4.20	6.30
Present study	70.0	-	30.0

In the series of Mutalik, DESc, Belani, Mehta, Kabrawala, CHA study the recovery from poisoning was observed in more than 90% of cases with early supportive and specific treatment.[16,17,18]

In present study recovery is in 70% cases.

CONCLUSION

Total 50 cases of acute organophosphoruspoisoning were studied for a period of 1 year. The overall conclusions of present study were as follows:

1. Extreme of age groups were spared and maximum number of O.P. compound poisoning were encountered in the age groups of 21 to 30 years (32%).
2. Suicidal attempts were there in 82% cases, accidental intoxication in 18% were encountered.
3. The highest mortality was reported in those cases intoxicated by inhalation (50%). Ingestion was next in order (30.4%).
4. The mortality was higher in >20 yrs as compared to younger patients (<20 yrs).
5. The mortality was directly related to severity of O.P. compound poisoning. The mortality was 47% in severe poisoning in comparison to 33% in moderate and 11% in mild poisoning.
6. Mortality was directly proportional to MTD. The shorter the MTD, more the chances of survival. The mortality was66.6% who presented between 13 hours to 24 hours as comparison, to 25% who presented from 5-12 and 31.4% who presented within 4 hrs.
7. There was no fixed dose of atropine in treatment of O.P.C. poisoning. Each patient is to be individualized for atropine dose.
8. The Mortality was higher in patients who had taken large amount of O.P. compound. Mortality was 54.54% in patient consumed >50 ml as compared to 11.1% in patient consumed below 25 ml.
9. O.P.C. poisoning are associated with many complications. The commonest among op is aspiration (12%) and among ventilation related is VAP.
10. Most commonly use op compound is monocrotophos followed by chlorpyriphos and cypermethrin but mortality is higher in dimethiole and malathion.
11. The mortality is higher (60%) in lower AchE activity (<1000).
12. The mortality rate is higher if duration of ventilation > 14 days.
13. Prognosis of patient with O.P. compound poisoning depends on following factors:

(a) Age of patient
(b) Amount of poison
(c) Route of ingestion
(d) Severity of poisoning
(e) Mean time delay
(f) Blood AchE activity

14. The overall mortality in O.P. compound poisoning was 30%.

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