Profile of Fatal Cases of Organophosphorus Poisoning at a Tertiary Care Centre, Mandya

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Abstract

Organophosphorus Compound (OP) poisoning is the most common and the highest amongst fatal cases of poisoning consumption deal in MIMS hospital. It is the commonly abused poison amongst rural and urban population more so amongst our Farmers. Fatal cases of organophosphorus poisoning were analyzed during the study period from 01.01.2016 to 31.12.2018. The analysis was done on age, sex, occupation, socio economic status, motive of poison consumption and result.

Mandya District being dominated by agriculturists and sugarcane being the cash crop, drought, insufficient rain fall, raising costs of living, high debts, Cauvery water non available for agricultural use due to water sharing between neighboring states like Tamilnadu, Pondichery etc., increasing number of bore wells and ground water depletion, leading to crop failures and thereby resulting in Farmers suicide.

The major cause of death in these cases treated at MIMS were Respiratory failure.

Key words: *Organophosphorus poisoning, Farmers suicide, Respiratory Failure.*

Introduction

Despite the apparent benefits of Organophosphorus compounds (OPC's) acute Organophosphate (OP) pesticide poison is a global increasing problem[1]. It is very common pesticide used rampantly in agricultural fields and is easy accessibility is increasing the incidence of suicidal and accidental poisoning rates. Its action is by inhibiting the enzyme Cholinesterase, thereby the accumulation of Acetylcholine at myoneural and synaptic junction leading to cholinergic over activity.

The incidence of organophosphorus poisoning has steadily increased in recent past and has reached a level where it can be called a "Social Calamity". Organophosphorus compound is seen with increasing frequency and carries 15-30% mortality in studies carried out at India[2]. Respiratory failure is common complication of organophosphorus poisoning leading to high mortality therefore effective and timely treatment becomes crucial for survival[3]. Hereby the retrospective study was undertaken to know the incidence and prevalence of fatal organophosphorus poisoning in cases autopsied at MIMS, Mandya.

Material and Method

This autopsy based retrospective study was conducted between Jan 2010 – Dec 2018 in Department of Forensic Medicine & Toxicology, Mandya Institute of Medical Sciences, Mandya. The data was collected from the postmortem reports. Out of 1581 cases OP Poisoning deaths autopsied at MIMS was 600 (3.79%). All the fatal cases autopsied confirmed by either clinical diagnosis RFSL reports were included in the study. The data analysis was done on the age, sex, motive of poisoning, cause of death, professional status, marital status, types of organophosphorus compound consumed.

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Results

The age of patients varied from 11 yrs. – 80 yrs. (Table No1). The vast majority of patients were males 90% (Table No.2) with male to female ration being 8:1 period of survival ranged from 1day to 15 days. The commonest motive of poisoning was suicidal in both males 88.83% and females 9.16% followed by accidental 1.18% males and 0.83% in females. There was one case of homicidal poisoning (Chart 1). Financial debts (90%) followed by chronic health ailments reasons (05%) coupled with crop failures and loans was the reason. One case of homicidal poisoning was a deaf and dump husband poisoned by wife and her paramour to get rid of him and gain his property, which the convicted lady admitted too. Respiratory failure 95% was the leading cause of death followed by Myocardial Infarction, Renal failure and Multi organ failure in (5%) cases noted[4]. Agriculturists / Farmers (75%) students (13.33%) house wives(10%) own business / self-employed (1.6%) not known (0.7%). 85% of the study population were married 20%, 15% males and 5% females were unmarried. Dichlorvos 73%, 18.33% of cases showed Diazinon and 8.3% Parathion consumption.

Discussion

Acute organophosphorus compound poisoning is one of the commonest causes of acute poisoning in Mandya. In my study majority of the persons were males (88.83%) and they were aged between 11-80 years similar observation were noted in other studies[5-9].

Commonest motive of poisoning was suicide[10]. The probable cause of mortality relied on various factors like its easy availability, inadequate rainfall, low procurement prices for sugarcane, lack of of prompt payment of dues from sugar factories and high input costs and inability to move away from water – intensive sugarcane crop leading to financial crisis [11]. In other cases, it was because of failure in exams, financial midlife crisis, love failures.

Conclusion

Organophosphorus poisoning is the most common poisoning encountered at Mandya Institute of Medical Sciences, Mandya with a male predominance. Commonest motive of poisoning was suicidal [12-14]. Economic crisis faced by Farmers and easy availability were the common cause of poisoning [15-16]. To prevent and reduce the incidence of organophosphorus compound poisoning it is better to change the economic policies of the Government, waiving of Farmers loans, insuring the crops, educating the farmers about alternate methods of farming which is less dependent on water, promoting animal husbandry, creating more jobs to the youth. Similarly, strict implementation of pesticide act, Banking and Government sectors to change their policy decision, drought management schemes, educating the public and youth about the life-threatening effects of organophosphorus compounds can certainly make difference in the life of farmers and youths and reduce the mortality rates thereby due to organophosphorus pesticide consumption.

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