

# FREQUENCY AND TYPES OF POISONING AMONG AUTOPSY CASES IN RAHIM YAR KHAN

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## ABSTRACT

**Background:** Nature and types of poisoning is relevant while planning of preventive measures for poisoning related deaths.

**Objectives:** To find out the frequency of fatal poisoning among autopsy cases in Rahim Yar Khan. Methodology: Design: Cross – Sectional Study. Duration: This study was carried out at Sheikh Zayed Medical / Hospital College Rahim Yar Khan over a period of five years from 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2012.

**Methodology:** During the period of study a total of 290 autopsies were conducted at SZMC/H, Rahim Yar Khan. Out of which 40 cases were of fatal poisoning, which were analyzed according to age, gender, habitat, manner of death and the toxic agent involved, and compared. Ethical approval was bought from Institutional Review Board of hospital. Data was analyzed by using SPSS 16 version 16.

**Results:** Out of total 290 autopsies conducted, poisoning was cause of death in 40 (13.79%) cases. Most common poison used in these 40 cases was Organophosphorus Compound 16 (40%). As for as the manner of death was concerned 25 (62.5%) cases were of suicidal nature 10 (25%), cases were homicidal in nature and 5(12.5%) cases were of accidental nature. The age group 15-30 years was seen in (75%) of cases. The age group 31 years and above years was seen in 10 (25%) of cases. More males 23 (57.5%) were more than involved than females. Deaths due to poisoning were more from rural areas 31(77.5%).

**Conclusion:** Our study showed that organophosphorus compounds are commonly used in autopsy cases in our area, for mainly suicidal purpose and young people are most commonly involved, which were mainly from rural areas. There is need for strict implementation of laws to regulate pesticides use, sales, transport and distribution.

**Key Words:** Autopsy, Fatal Poisoning, Organ-phosphorus compound, suicide, pesticides

## INTRODUCTION

Unnatural deaths in community overall indicates status, socio-economic status and mental health of people in the community.<sup>1,2</sup> Poisoning as a cause of death is known since ancient times.<sup>3,4</sup> According to law all deaths due to poisons are recorded as unnatural deaths and a case of death which is suspected or clear case of poisoning must undergo autopsy.<sup>5,6</sup> Low cost and easy availability of poisons has major role in suicidal and accidental poisoning in many developing countries like Pakistan.<sup>7</sup> Most of the time fatal poisoning is due to organo-phosphorus compound (pesticide/insecticides).<sup>8</sup> More than half of global deaths from pesticide poisoning occur in China.

According to WHO in 1999 more than 3 million cases of poisoning has been reported worldwide and out of which many cases ended in deaths mainly in farmers.<sup>9-11</sup> The reason is the vast exposure of poisonous toxins during cultivation and during handling. Hence treatment and people preventive steps are in controlling in poisoning related death in any community.<sup>8,9</sup>

A comprehensive data has revealed that among developed countries death due to poisoning is low

but in developing countries it is very high and it is fourth common cause of mortality especially in rural areas.<sup>6,7,8</sup> Ingestion of Organophosphorus Compound (OPC) as an attempt for suicide purposes are major problem probably because of easy availability of pesticides.<sup>10,11</sup> This occurs due to extensive use of poisons in agriculture field and because of unregulated sale of these products over the country in Pakistan. In our area same situations prevails and difficult to say that which kind of poison is more frequently causing deaths. So this study was conducted various parameter of poisoning such as type of poisoning, gender, frequency and age group are involved, among autopsy cases.

## METHODOLOGY

This was cross sectional study which was conducted at Sheikh Zayed Medical College Hospital, Rahim Yar Khan. A total of 290 consecutive autopsies were conducted from 1<sup>st</sup> January, 2008 to 31<sup>st</sup> December 2012. Autopsies conducted by District Medical Board and after extrusion were excluded. Frequency and percentage of poisoning were calculated for all variables.

Ethical approval was sought from Institutional

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Review Board of the institute. Variables included in this study were age, sex, residence, types of poisoning and nature. Frequency and percentage was calculated for each variable.

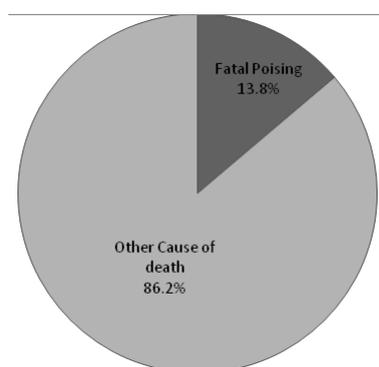
## RESULTS

Out of total 290 autopsies conducted, poisoning was cause of death in 40 (13.79%) cases. Most common poison used in these 40 cases was Organophosphorus Compound 16 (40%). As for as the manner of death was concerned 25 (62.5%) cases were of suicidal nature 10 (25%), cases were homicidal in nature and 5(12.5%) cases were of accidental nature.

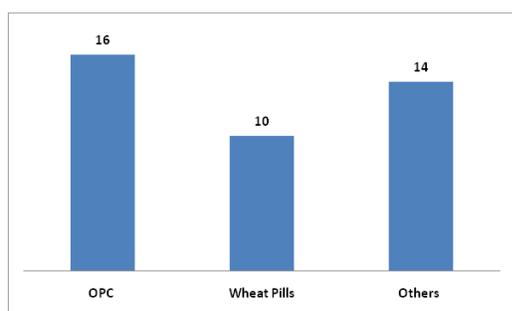
The age group 15-30 years was seen in (75%) of cases. The age group 31 years and above years was seen in 10 (25%) of cases. More males 23 (57.5%) were more than involved than females. Deaths due to poisoning were more from rural areas 31(77.5 %).

Figure I shows that frequency of fatal poisoning among total autopsy cases. Autopsies in which cause of death was poisoning were 40 (13.8%). Most common poisons used for suicidal purpose was OPC, 16(40%). The age range was 18-40 years.

**Figure I: Frequency of fatal poisoning among total autopsy cases.**



**Figure II: Types of poisoning among cases**



## DISCUSSION

Acute fatal poisoning is a recognized problem of the especially the developing world.<sup>2, 3, 4</sup> Pakistan is basically an agricultural country. The exposure of pesticides is more in rural areas because these products are commonly used in large amounts in land cultivation.<sup>12,13</sup> Mortality is more in cases of poisoning and depends upon factors like nature of poison, and its dose consumed, available health facilities and time taken to reach health facility and provision of healthcare.

Poisoning is one of the most common form of fatal self-injury such as suicide in rural ASIA accounting for more 60% of all the deaths. Young are more emotional, have lesser maturity of mind, more exposed to the pace competition and expectation of modern life.<sup>10-13</sup> According to this study in 5 years, total 290 autopsies were conducted. As compared to other developing countries our fatality rate was 13.79% which is much less as compare to other developing countries.<sup>12,13,14</sup>

The reason may be that all cases of poisoning are not reported or not come to health facilities for treatment purposes, especially females cases which less reported. Fatalities with OPCs were also primary agent in many developing countries.<sup>10-14</sup> In all these countries males are more commonly exposed to stress, and occupational hazards.<sup>6,7,8</sup> Fatal poisoning pattern is same if we compare our study with other developing countries. OPCs are used widely throughout the world. Pesticide self-poisoning killing many people every year and most of deaths occurring rural areas.<sup>13,14</sup>

According to a research in Pakistan as many as 10.00 Pakistani farmers have poisoning annually by use of pesticide and that is mainly in rural cotton growing area. In many rural area of south Asia pesticides ingestion account for 60% of suicide estimate suggest that many people in the region kill themselves each year by ingestion. So the following measure should be adopted during the use of pesticides.<sup>12,13</sup>

## CONCLUSION

This study showed that organophosphorus compounds are commonly used in autopsy cases in our area, for mainly suicidal purpose and young people are most commonly involved, which were mainly from rural areas.

There is need for strict implementation of laws to regulate pesticides use, sales, transport and distribution.

**Authors Contribution:** SMAA: Idea generation, writeup. Data Collection, Idea generation. FT: Data analysis, interpretation and supervision of study. KM: Helps to acquired the data. All authors critically revised and approved its final version.

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