



Original Research Article

# Trends of poisoning cases in Melmaruvathur region of Tamil Nadu: A retrospective study of 3 years

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## Abstract

**Background:** Poisoning cases is a significant contributor to mortality and morbidity all over the world. Acute poisoning cases form one of the commonest causes of emergency hospital admissions.

**Material and methods:** It is a retrospective study of 106 poisoning cases admitted in M.A.P.I.M.S., which is a tertiary health care centre in Tamil Nadu, India from January 2010 to December 2012.

**Results:** The incidence of poisoning was highest in the age range from 20-50 years. Most common poison was insecticide/ rodenticide and cases were mostly suicidal in nature.

**Conclusion:** Trends of poisoning cases in Melmaruvathur region of Tamil Nadu are more or less similar to other parts of India.

## Key words

Poisoning, Insecticides, Yellow oleander, Suicide, Homicide.

## Introduction

Poisoning cases is a significant contributor to mortality and morbidity all over the world. Acute poisoning cases form one of the commonest causes of emergency hospital admissions. Pattern of poisoning in a region depends on variety of factors, such as availability of poisons, socioeconomic status of

population, religious and cultural influence and availability of poisons. It has been estimated that about 5-6 persons per lakh of population die due to poisoning every year [1]. The commonest poisoning in India and other developing countries is due to pesticides, the reasons being agriculture based economy, poverty and easy availability of highly toxic pesticides. The present study was conducted



retrospectively to know the pattern of poisoning cases in the region.

## Material and methods

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The present study was conducted retrospectively in the tertiary health care centre of MAPIMS, Melmaruvathur, Tamil Nadu during the period of January 2010 to December 2012. We selected 106 cases of poisoning for the present study. All relevant information like name, age, sex, religion, marital status, education, profession, type of poison, manner of poisoning, survival period, etc. were collected from the available hospital case sheets and they were tabulated for easy study and comparison with the works of other authors.

## Observation

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The incidence of poisoning was high which constitute about 11.6% of all medico-legal cases registered during the study period. The incidence was highest in the age range from 20-50 years, with mean value of 35 years. Females outnumbered males with a sex ratio of 1: 1.3 (male: female). Age and sex wise distribution of cases were as per **Table - 1**.

Male or female, the incidence was high in married persons as per **Table - 2**. Poisoning cases were mostly suicidal in nature, seen in 74 cases (69.8%). There were two cases of homicidal poisoning in one incident involving two small children, the accused being mother of the two children. There was not a single case of homicidal poisoning in adults as per **Table - 3**.

Type of poison used was as per **Table - 4**. Most of the patient died within the first 24 hours of admission. In one case of alleged history of rodenticide (Zinc phosphide) poisoning, the patient expired on the 9<sup>th</sup> day as per **Table - 5**.

## Discussion

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In the present study, the incidence of poisoning was 11.6% of all medico-legal cases. Though there was some up and down, in average we can say that the incidence does not recede with time. This finding was consistent with the works of other authors [2, 3, 4]. Higher incidence of poisoning in the individuals of younger age group of 21-40 years can be explained by the fact that this age group people are more exposed to stress of life like family problems, failure to get job, failure in love or exams, etc. Our finding was also consistent with the studies done by various authors [2, 3, 5]. Unlike the studies conducted by other authors [6, 7, 8], the present study observed the higher incidence of poisoning in female population.

Most of the studies including the present study showed that majority of cases were suicidal in nature, seen in 74 cases (69.8%) followed by cases of unknown manner, seen in 17 cases (16%). Similar findings were also reported by other studies done by Aggarwal NK and Aggarwal BBL [5], Gargi J, et al. [9] and Shingh VP [10].

Most commonly encountered poisons were insecticides including rodenticides, seen in 65 cases (61.5%). It may be due to their easy availability in most of the family as it governs village areas where agriculture is the main occupation. Insecticides are also easily purchasable from the market. It is also consistent with the works of other authors. Unlike other studies in the present study, there were good numbers of cases of Yellow oleander seed poisoning. In south India, incidence of Yellow oleander seed poisoning is comparatively high. Most of the deaths occurred within the first 12-24 hours. Survival chance will be more if the patient is brought within the fatal period of the poison. The similar observation was also



pointed out by Gupta, et al. [11] and Dhaval J. Patel and Pawan R. Tekade [12].

## Conclusion

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Trends of poisoning cases in Melmaruvathur region of Tamil Nadu are more or less similar to other parts of India.

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**Table – 1:** Age and gender wise distribution of cases.

Age in years	Male (%)	Female (%)	Total (%)
0-10	0 (0%)	2 (1.2%)	2 (1.2%)
11-20	5 (4.7%)	10 (9.4%)	15 (14.1%)
21-30	10 (9.4%)	16 (15.1%)	26 (24.5%)
31-40	15 (14.2%)	12 (11.3%)	27 (25.5%)
41-50	11 (10.4%)	14 (13.2%)	25 (23.6%)
51-60	4 (3.8%)	3 (2.8%)	7 (6.6%)
61-70	1 (0.9%)	2 (1.2%)	3 (2.8%)
Above 70	1 (0.9%)	0 (0%)	1 (0.9%)
Total	50 (47.2%)	56 (52.8%)	106 (100%)

**Table – 2:** Cases distribution according to marital status.

Marital status	Male (%)	Female (%)	Total (%)
Married	27 (25.5%)	33 (31.1%)	60 (56.6%)
Unmarried	19 (17.9%)	21 (19.8%)	40 (37.7%)
Divorced	1 (0.9%)	5 (4.7%)	6 (5.7%)
Total	47 (44.3%)	59 (55.7%)	106 (100%)

**Table – 3:** Distribution according to manner of consumption.

Manner	Male (%)	Female (%)	Total (%)
Unknown	6 (5.7%)	11 (10.4%)	17 (16%)
Suicidal	36 (34%)	38 (35.8%)	74 (69.8%)
Accidental	5 (4.7%)	8 (7.5%)	13 (12.3%)
Homicidal	0 (0%)	2 (1.2%)	2 (1.2%)
Total	47 (44.3%)	59 (55.7%)	106 (100%)

**Table – 4:** Distribution according to type of poison.

Type of poison	Male (%)	Female (%)	Total (%)
Unknown	13 (12.3%)	7 (6.6%)	20 (18.9%)
Insecticide/ Rodenticide	29 (27.4%)	36 (34%)	65 (61.3%)
Phenyl/ Cleaning agent	2 (1.2%)	5 (4.7%)	7 (6.6%)
Yellow oleander	2 (1.2%)	9 (8.5%)	11 (10.4%)
Others	1 (0.9%)	2 (1.2%)	3 (2.8%)
Total	47 (44.3%)	59 (55.7%)	100 (100%)



**Table – 5:** Cases distribution according to survival period.

<b>Survival period</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>Total (%)</b>
0-12 hours	15 (14.1%)	21 (19.8%)	36 (34%)
12-24 hours	23 (21.7%)	29 (27.4%)	52 (49%)
24-48 hours	5 (4.7%)	7 (6.6%)	12 (11.3%)
3-7days	3 (2.8%)	1 (0.9%)	4 (3.8%)
More than 7 days	1 (0.9%)	1 (0.9%)	2 (1.9%)
Total	47 (44.3%)	59 (55.7%)	100 (100%)