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TOXICOEPIDEMIOLOGY OF POISON CASES IN SECONDARY CARE HOSPITAL

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Abstract

The epidemiology of poisoning can be studied from different perspectives. Early correct diagnosis and appropriate treatment, conversely, are often lives saving. Therefore, the knowledge of the general pattern of poisoning in a particular region would help in early diagnosis and management of poisoning, which in turn should result in a reduction of morbidity and mortality. Retrospective observational Study was conducted for a period of six months in the general medicine and emergency (ICU) units at Government General hospital, Madanapalli. In our study we found that the poisoning was due to various products. 92.5% of cases were suicidal poisoning. maximum number of victims 68 (30%) belonged to age group of 41-50 years. we observed that Insecticides was the most common consumed poison which accounted for 101 (44.5%). 16. Organophosphorus was the maximum 33(38.4%) in the detected cases. Persons with psychosocial problems should be identified at the earliest and should be referred for psychiatric counseling. Educate the family to support them in recovering.

Key words: Counselling, Epidemiology, Poisoning, Psychosocial problems

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Introduction

In the present, poisoning as become a major epidemic of non-communicable disease. Suicide, a major problem posed earlier amongst the industrialized nations has shifted its paradigm into the developing countries.[1] Deaths due to poisoning come next to road traffic accident death, among the unnatural deaths according to National crime record bureau India. [2] Pattern of poison is influenced by different factors like, occupation, socio economic status and emotional impact. Pattern of poisoning varies in every place. [3] Knowing the pattern of poisoning cases in a region helps in suggesting proper earliest preventive measures and also in early management of cases. [4] Poisoning can be accidental exposure or intentional exposure. Many studies have shown that mortality is high in deliberate self-poisoning. [5] This study will aim at determining socio demographic profile, pattern of poisoning during the study period. Therefore the findings of this study will be helpful for the government authorities and planning bodies, to plan and implement strategies towards prevention of poisoning. The rising incidences of Suicide poisoning with prevalence, made us to undertake this study to know the patterns, trends & other factors of deaths due to poisoning and thereby drawing attention of the health policy makers to enhance the legislative measures and prevent such casualties.

Research methodology

- **Study design:** Our observational study was Prospective
- **Study Site –** Government General Hospital, Madanapalli.
- **Duration of Study –** 6 months
- **Study Population -** from the above said studies cases were collected. This study is mainly based on Mode of Poisoning, Nature of Poisoning and Death Due to Poison.
- **Sample Size:** 227

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- **Eligibility Criteria:**

  Inclusion Criteria: All cases of poisoning, irrespective of age, sex, type and mode of poisoning, ingredients of poisons and the status of patients after poisoning were recorded

  Exclusion criteria: Patients who died within few minutes of hospitalization even before the initial treatment could be given were excluded from the study.

- **Following observations were made**

  - Name
  - Age
  - Sex
  - Mode of Poisoning (Poisoning due to Accidental or Suicidal significant Morbidity & Mortality)
  - Nature of Poisoning (pattern of Poisoning in a region depends upon various factors such as Availability Cost and access to Toxic Agent, Socio-Economic Status, Cultural and Religious Characteristic of People).
  - Common treatments given to the patients. (Activated Charcoal- it blinds to the Poison and stop it from being further absorbed in the blood)

    Anti-dote – this prevents the Poison from Working or Reverse effects of Poison

    Sedatives – if the person agitated sedative will be given.

    A ventilator (breathing machine) – this may be used if the person stops breathing.

- **Ethical committee approval:** Institutional ethical approval was obtained from MCPM prior to the start of the study. In addition, obtained the medical superintendent's permission prior to accessing and reviewing patient case sheets.
- **Statistical Analysis**: Frequency and descriptive analysis are done.

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Results

TABLE 1 -AGE WISE DISTRIBUTION

Age	No. of cases	%
0-10	7	3.1%
11-20	28	12.3%
21-30	46	20.3%
31-40	49	21.6%
41-50	**68**	**30.0%**
51-60	18	7.9%
61-70	5	2.2%
71-80	6	2.6%

TABLE 2 – SEX WISE DISTRIBUTION

Sex	No. of cases	%
Male	**159**	**70.0%**
Female	68	30.0%

TABLE 3 – DISTRIBUTION ACCORDING-RELIGION

Religion	No. of cases	%
HINDUS	**210**	**92.5%**
CHRISTIANS	13	5.7%
MUSLIMS	4	1.8%

TABLE 3: EDUCATIONAL STATUS

Education	No. of cases	%
Primary	**96**	**42.3%**
Middle	0	0.0%
Higher Secondary	45	19.8%
Graduate	17	7.5%
Illiterate	69	30.4%

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TABLE 5: OCCUPATIONAL WISE DISTRIBUTION

Occupation	No. of cases	%
Unemployed	20	8.8%
Student	24	10.6%
House wife	47	20.7%
Daily wage worker	**77**	**33.9%**
Professional	12	5.3%
Business	8	3.5%
Farmer	**10**	**4.4%**
Others	29	12.8%

TABLE 6: MARITAL STATUS

MARITAL STATUS	No. of cases	%
Married	**180**	**79.3%**
Unmarried	47	20.7%
Divorced	0	0.0%

TABLE 6A: SEX – MARITAL STATUS DISTRIBUTION:

Type	No. of cases	%
Female – Unmarried	21	9.25%
Male – Unmarried	64	28.2%
Female – married	50	22.0%
Male – married	**92**	**40.5%**

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TABLE 7: TYPE OF FAMILY

Type	No. of cases	%
Nuclear	**198**	**87.2%**
Joint	29	12.8%
Unknown	0	0.0%

TABLE 8: SOCIO-ECONOMIC STATUS

Socio-economic status	No. of cases	%
Lower	**160**	**70.5%**
Middle	66	29.1%
High	1	0.4%

TABLE 9: DOMICILIARY PROFILE

DOMICILIARY PROFILE	No. of cases	%
Rural	60	26.4%
Urban	**167**	**73.6%**

TABLE 10: SESONAL DISTRIBUTION

Season	No. of cases	%
Summer	**81**	**35.7%**
Rainy	53	23.3%
Autumn	48	21.1%
Winter	45	19.8%

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TABLE 11: ROUTE OF EXPOSURE

Route of exposure	No. of cases	%
Oral	**225**	**99.1%**
Others (inhalation)	2	0.9%

TABLE 12: PLACE OF CONSUMPTION

Place of consumption	No of cases	%
Home	**189**	**83.3%**
Workplace	8	3.5%
Outside	30	13.2%
Others	0	0.0%

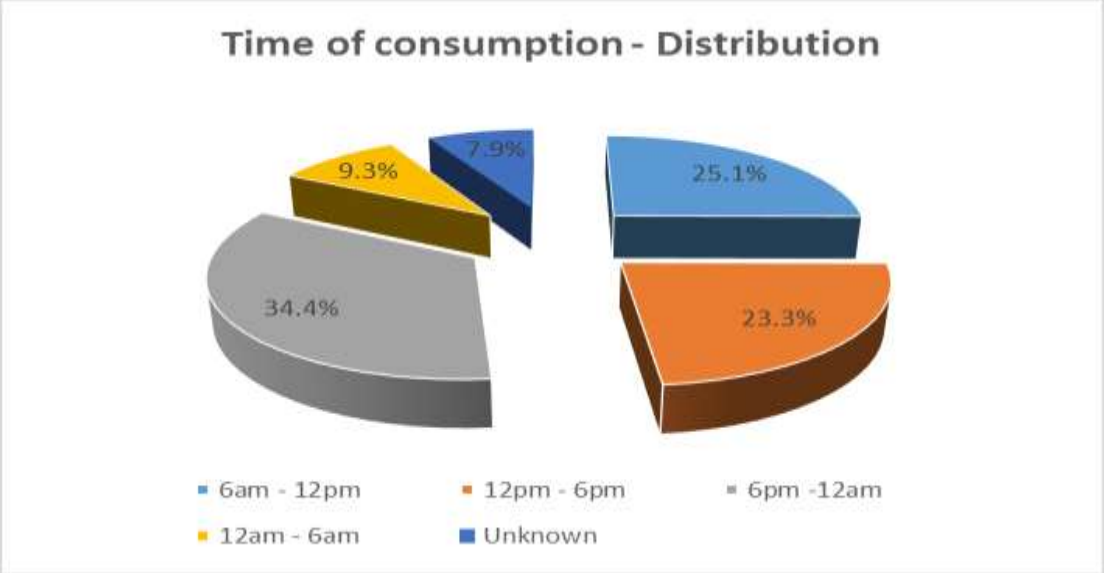

FIGURE 1: TIME OF CONSUMPTION

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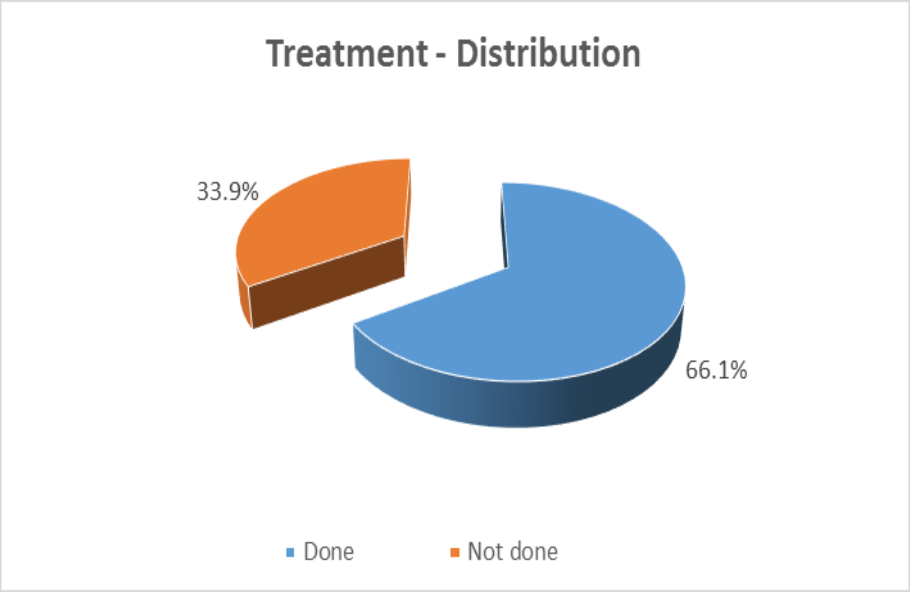
FIGURE-2: TREATMENT



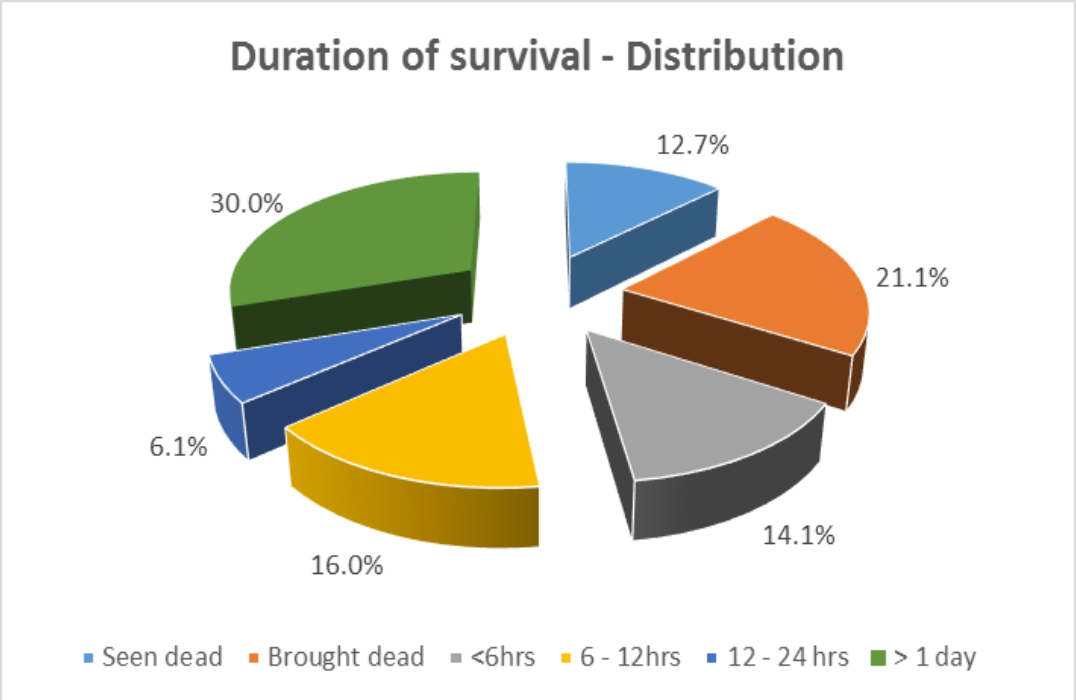


FIGURE-3: DURATION OF SURVIVAL

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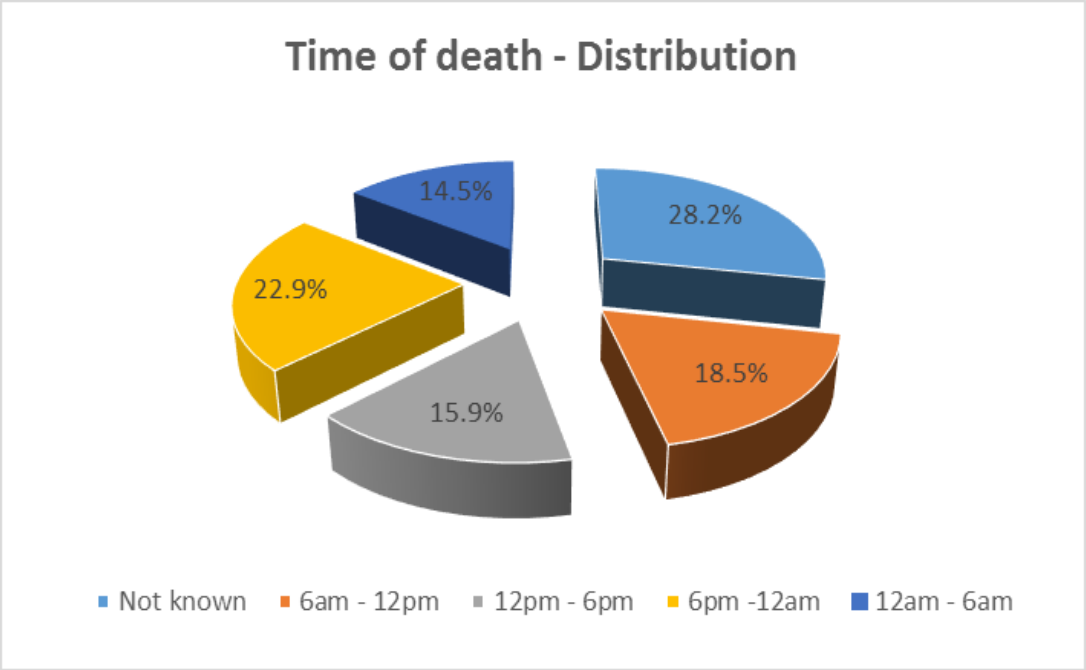

FIGURE-4: TIME OF DEATH

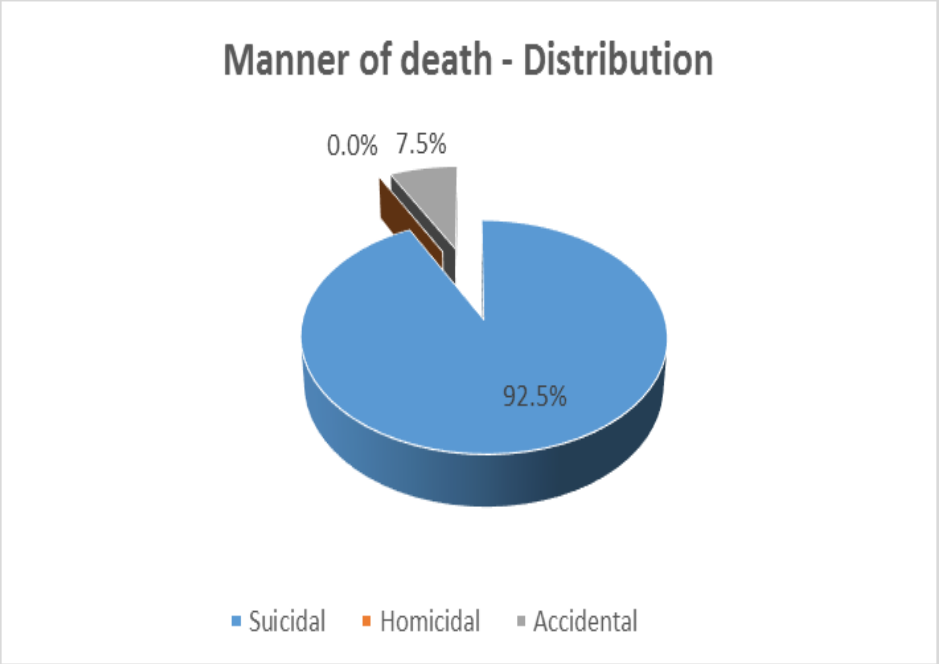

FIGURE-5: MANNER OF DEATH

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TABLE 13: POISON ACCORDING TO HISTORY

Poison according to history	No. ofcases	%
Acid	28	12.3%
Crane poison	22	9.7%
Insecticide	**101**	**44.5%**
Kerosene	3	1.3%
Oleander seeds	4	1.8%
Ethyl alcohol	1	0.4%
Rodenticide	13	5.7%
Drug overdose	23	10.1%
Sewer gas	2	0.9%
Others	10	4.4%
Unknown	20	8.8%

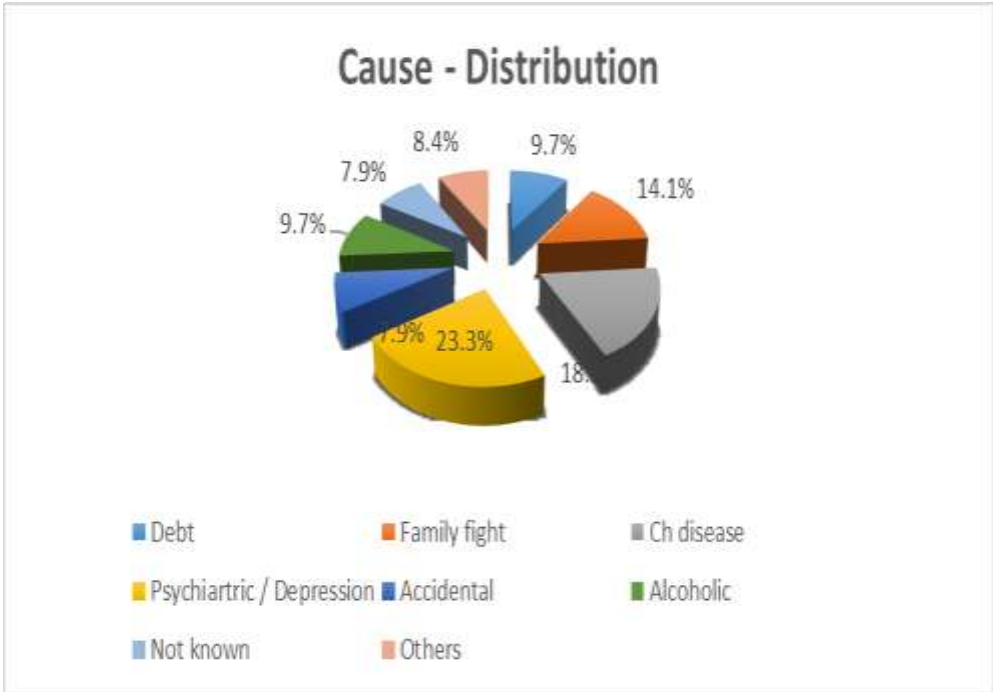

FIGURE 6: CAUSE OF CONSUMPTION OF POISON

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Discussion

The present study revealed the following: [6-12]

1. 9031 cases were brought for post-mortem examination out of which 227(2.5%) deaths were due to poisoning.
2. Out of 227 autopsied poisoning victims, 92.5% of cases were suicidalpoisoning.
3. There were 159 (70.0%) male and 68 (30.0%) female amongstpoisoning cases.
4. In this study maximum number of victims 68 (30%) belonged to agegroup of 41-50 years.
5. Most of cases 189 (83.3%) took place at home and 160 (70.5%) victimsbelonged to lower socioeconomic status.
6. Majority of the victims were belonging to Hindu consisting of 210(92.5%) cases.
7. 180 (79.3%) were married. 40% of the males were married.
8. In our study, most of cases 78 (34.4%) consumed poison during 6pm to12am.
9. A greater number of suicidal poisoning cases 81 (35.7%) were in thesummer.
10. It was also found that 45 (19.8%) were brought dead and 27(11.9%)were seen dead.
11. The maximum number of cases succumbed to death on treatment after24hrs.
12. Amongst the 227 victims of poisoning, 150 (66.1%) cases undergonetreatment.
13. Chronic Depression was the main reason for poison consumption in 53(23.3%) of the deaths.
14. In this study, we observed that Insecticides was the most commonconsumed poison which accounted for 101 (44.5%).

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15. Forensic science laboratory detected Poison in 86(37.9%)

16. Organophosphorus was the maximum 33(38.4%) in the detected cases.

Conclusion

Poison information center should be initiated in each district throughout the country. It helps in timely diagnosis and treatment. Government should implement strict rules to decrease the easy accessibility and availability of pesticides. All the hospitals should have separate toxicological unit exclusively dealing with clinical poisoning cases. Improve the facilities in Primary Health Center to treat all poisoning causalities.

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