



## Outcome of cow dung powder poisoning depending upon clinical profile- Retrospective study

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### Abstract

**Background and Objective:** *Poisoning is an important health problem causing significant morbidity and mortality throughout the world. The general pattern of poisoning in a particular region will help in early diagnosis and treatment of cases, thus decreasing the rate of mortality and morbidity.*

*The present study was carried out with the objective to investigate the pattern of acute Cow Dung Powder Poisoning (Auramine-O, yellow dye) in a tertiary care hospital, Salem DT. Tamil Nadu, India.*

**Material and Method:** *A retrospective analysis of all Cow dung powder poisoning (yellow –dye Auramine-O) admitted in the department of Annapoorna Medical Collage & Hospital. Salem, Tamil Nadu, India. From January 2014 to July 2019 was done to study the Out-Come of Cow dung powder poisoning. Data regarding Age, Sex, marital status, occupation, religion, locality, rout of exposure, time elapsed after intake. Circumstances of poisoning, duration of hospital Admission and outcome were collected and analyzed.*

**Conclusion:** *This study adds information to the existing data which may help to develop prevention statergies. Health education to the house wives and coolies and student by either by house trained faculty or phsycologists and early detection of risk taking behavior in adults to some extent to prevent self harming in all patients*

**Keyword:** *Cow dung powder ' Saani Powder', Yellow Powder (Auramine –O Poison).*

### Introduction

Cow dung powder poisoning is more common in surrounding village of salem district. It was used as suicidal poisoning, self poisoning in south India, Tamilnadu. Knowledge of General pattern of poisoning in a particular region will help in early diagnosis and treatment of cases, then decreasing rate of mortality morbidity. Information available in our locality with regard to cow dung powder poison is limited. The present study was came out with the object to investigate

the pattern of cow dung powder poisoning in a tertiary care hospitals which includes the popular demographic distribution of cases depending on the nature of poison and treatment.

### Material and Methods

This is a retrospective record based study conducted in a tertiary care hospital. The study included all diagnosed case of yellow cow dung powder poisoning at all age groups reported during 5and1/2yrs time period between January

2014 to July 2019. The study was conducted with the approval from Institute Ethics committee and confidentiality of data was ensured.

Data regarding age, sex, marital status, occupation, religion, locality, route of exposure, time lapsed after intake, circumstances of poisoning, name of the poison, chemical type, duration of hospitalization and outcome were collected was entered in computer data base and analysed by using proportion and Chi-square.

## Results

In the present study 29 cases of poisoning were reviewed retrospectively. All reported cases were found to be suicidal poisoning. In all cases the route of exposure was oral. Females (16,55.2%) outnumbered Males (13,44.8%). Majority of cases were

AGE GROUP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20	8	27.6	27.6	27.6
	21-30	13	44.8	44.8	72.4
	31-40	6	20.7	20.7	93.1
	41-50	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

In age group (19-50yrs)

Most of the patients hospitalized within six hours after toxic exposure. No previous history of poisoning is seen in all. Gastric lavage was done for all the cases. Specific antidote is not available. Treated symptomatically. All patients received adequate symptomatic and supportive life saving treatment in the form of mechanical ventilation. No intubation in our study, no mortality or death recorded in our study.

## Discussion

The present study showed that the cow dung powder poisoning data collected were from Villages surrounding our Annapoorna Medical College & Hospital, siragapadi, salem DT T.N.INDIA. Majority of cases were from village ellampillae nearest distance to the hospital.

Cow dung powder poison available in two different colours, yellow powder (Aromine-o) And green powder (Malachite green) commoner in rural Tamilnadu (south India) in the District as Coimbatore, Erode and Tripura. Even though powder sale is legally banned the powder is easily available in grocery shops. It can cause gastrointestinal symptoms and persistent seizure some times.

Cow dung powder poisoning was found to be most common poisoning consumed in our surrounding localities. It has aptly said by various researchers that the pattern of poisoning in a region depends upon various factors such as availability, cost and access to toxic agents, Socioeconomic status, cultural and religious characteristic to people.

It is interesting to note that this powder has been so widely used, that the district authority banned sales of the powder in 2007. However it is still widely available and there is no trend of a decrease in the incidence of cow dung powder poisoning during the study period.

This under scarce the fact that banning such substance without educating the public or tackling fundamental cause for self harming will not succeed. The present study showed that Cow dung powder is more common in females compared to Males in this locality. The male to female ratio was (1:2). This pattern was observed in our study. Poisoning in students in the locality was equal in both sexes reflect their mental vulnerability to stress in the form as Failure in the exam, Maladjustment and inability to cope up with the high expectation from patients. Higher degree of stress in academic, financial and social sectors as well as inability to achieve the target on professional, educational and socio economic forms leading to limited attractions could be the contributory factor in taking suicidal act.

The house wives were the next vulnerable groups as they are easily exposed to the poisoning agents, particularly Cow dung powder poison.

Factors like Dowry, cruelty by in-laws, family quarrels, mal adjustment in marriage life and

dependency of women and house band and responsible for the higher incidence of poisoning among house wives.

Most of the patent in this study were in the young age group and maximum number of pts (29,100%) was age group of 19-20years followed by (8,27.6 %) in 21-30 yr age groups. since all the cases were suicidal intention the distribution pattern shows the mental vulnerlability and impulsiveness of our patients., loss, abuse, mental illness and pressure from cultural and social backgrounds could be the possible risk factor. studies in the past revealed that poisoning was more common in the age group 20-30 yrs. the change noted in this study can be attributed to the fact that the people are subjected to substantial amount of mental stress much earlier in their life in terms of adapting to modern life styles, failure in love, family problems.

In our study, overall mortality was found to be (0%). there was no mortality in our present study. in our locality cow dung powder poisoning more common. In our study the patients consumption of powder was in small quantity. Not lethal dose. The approach to emergency ward was earlier to 1/2 an hour to maximum hours of 3-5hours.

Immediate treatment and follow up and management resulted in less mortality. Patient has only Gastro intestinal irritation and few episodes of vomiting, all other parameters were normal. Incidence maximum in the age group 21-30 yrs, (13,44.8%), minimum age group were 41-50 (2,6.9%).

**AGE GROUP**

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	31-40	6	20.7	20.7	93.1
	41-50	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

Attempt were more in female (16,55.2%) than males ( 13,44.8%)

SEX					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	16	55.2	55.2	55.2
	MALE	13	44.8	44.8	100.0
	Total	29	100.0	100.0	

All cases from nearest villages surrounding villages from our collage hospital.

DISTRICT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SALEM	29	100.0	100.0	100.0

By occupation maximum were house wives (13,44.8%), followed by coolies (10,34.5%).

OCCUPATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Coolie	10	34.5	34.5	34.5
	driver	1	3.4	3.4	37.9
	Driver	1	3.4	3.4	41.4
	HW	13	44.8	44.8	86.2
	Student	4	13.8	13.8	100.0
	Total	29	100.0	100.0	

Among religions Hindu (26, 89.7%) followed by muslims (2, 6.9%) and Christians (1, 3.4%)

RELIGION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Christian	1	3.4	3.4	3.4
	Hindu	26	89.7	89.7	93.1
	Muslim	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

The time gap between consumption of poison to starting treatment was earliest was 0.5 hrs (3.4%) to maximum of 9 hrs.(3.4%),no of cases reaching to hospital 0.5 hrs to1 hr was 8. 1.15-2hrs, 6case, 2.15hrs-3hrs 9 cases,5to 6 hrs were 5 cases,,9hrs was 1 case, and signs staining of skin(1case had staining of lips.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0.25	1	3.4	3.4	3.4
	0.5	2	6.9	6.9	10.3
	1	4	13.8	13.8	24.1
	1.149	1	3.4	3.4	27.6
	1.3	1	3.4	3.4	31.0
	1.5	1	3.4	3.4	34.5
	2	3	10.3	10.3	44.8
	2.15.	1	3.4	3.4	48.3
	2.299	1	3.4	3.4	51.7
	2.30.	2	6.9	6.9	58.6
	3	5	17.2	17.2	75.9
	3.3	1	3.4	3.4	79.3
	5	2	6.9	6.9	86.2
	5.30.	2	6.9	6.9	93.1
	6	1	3.4	3.4	96.6
9	1	3.4	3.4	100.0	
Total	29	100.0	100.0		

QUANTITY IN POCKETS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.25	1	3.4	3.4	3.4
	.50	10	34.5	34.5	37.9
	1.00	14	48.3	48.3	86.2
	2.00	2	6.9	6.9	93.1
	3.00	1	3.4	3.4	96.6
	4.00	1	3.4	3.4	100.0
	Total	29	100.0	100.0	

VOMITING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	6.9	6.9	6.9
	NO	21	72.4	72.4	79.3
	Yes	6	20.7	20.7	100.0
	Total	29	100.0	100.0	

FREQUENCY OF VOMITING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	23	79.3	79.3	79.3
	1.0	3	10.3	10.3	89.7
	2.0	1	3.4	3.4	93.1
	5.0	1	3.4	3.4	96.6
	7.0	1	3.4	3.4	100.0
	Total	29	100.0	100.0	

STAINING LIPS					
Other		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lips	1	3.4	3.4	3.4
	Nil	28	96.6	96.6	100.0
	Total	29	100.0	100.0	

GIT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	29	100.0	100.0	100.0

EPIPAIN					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	26	89.7	89.7	89.7
	Yes	3	10.3	10.3	100.0
	Total	29	100.0	100.0	

NO. OF DAYS STAY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	6.9	6.9	6.9
	2.0	8	27.6	27.6	34.5
	3.0	7	24.1	24.1	58.6
	4.0	7	24.1	24.1	82.8
	5.0	3	10.3	10.3	93.1
	7.3	1	3.4	3.4	96.6
	9.0	1	3.4	3.4	100.0
	Total	29	100.0	100.0	

RECOVERY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Recovered	29	100.0	100.0	100.0

SEQUALAE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NIL	29	100.0	100.0	100.0

STOMACH WASH					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	100.0	100.0	100.0

WIHT WATER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	100.0	100.0	100.0

WITH SALINE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	26	89.7	89.7	89.7
	Yes	3	10.3	10.3	100.0
	Total	29	100.0	100.0	

RTA					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	24	82.8	82.8	82.8
	Yes	5	17.2	17.2	100.0
	Total	29	100.0	100.0	

ACTIVE CHARCOL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	26	89.7	89.7	89.7
	Yes	3	10.3	10.3	100.0
	Total	29	100.0	100.0	

ANTE EMITIC					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	23	79.3	79.3	79.3
	Yes	6	20.7	20.7	100.0
	Total	29	100.0	100.0	

PPI					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	23	79.3	79.3	79.3
	Yes	6	20.7	20.7	100.0
	Total	29	100.0	100.0	

VIT-K INJ					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	29	100.0	100.0	100.0

IV FLUIDS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	iNj.atropiN	1	3.4	3.4	3.4
	No	28	96.6	96.6	100.0
	Total	29	100.0	100.0	

AGE GROUP					
		Frequency	Percent	Valid Percent	Cumulative Percent
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	31-40	6	20.7	20.7	93.1
	41-50	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

Descriptives

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
QUANTITY IN POCKETS	29	.25	4.00	1.0431	.80198
FREQUENCY OF VOMITING	29	.0	7.0	.586	1.5928
DURATION	29	.0	.0	.000	.0000
NO. OF DAYS STAY	29	1.0	9.0	3.390	1.7432
Valid N (listwise)	29				

SEX * QUANTITY IN POCKETS Crosstabulation								
		QUANTITY IN POCKETS						Total
		.25	.50	1.00	2.00	3.00	4.00	
SEX	FEMALE	1	6	7	1	0	1	16
	MALE	0	4	7	1	1	0	13
Total		1	10	14	2	1	1	29

SEX * EPIPAIN Crosstabulation				
		EPIPAIN		Total
		No	Yes	
SEX	FEMALE	14	2	16
	MALE	12	1	13
Total		26	3	29

Sex = Female

Descriptive Statistics <sup>a</sup>					
	N	Minimum	Maximum	Mean	Std. Deviation
QUANTITY IN POCKETS	16	.25	4.00	1.0156	.89661
FREQUENCY OF VOMITING	16	.0	7.0	.875	2.0616
DURATION	16	.0	.0	.000	.0000
NO. OF DAYS STAY	16	1.0	9.0	3.456	2.2235
Valid N (listwise)	16				

a. SEX = FEMALE

SEX = MALE



Descriptive Statistics <sup>a</sup>					
	N	Minimum	Maximum	Mean	Std. Deviation
QUANTITY IN POCKETS	13	.50	3.00	1.0769	.70256
FREQUENCY OF VOMITING	13	.0	2.0	.231	.5991
DURATION	13	.0	.0	.000	.0000
NO. OF DAYS STAY	13	2.0	5.0	3.308	.9473
Valid N (listwise)	13				

a. SEX = MALE

## Results

All reported cases were found to be suicidal poisoning. Majority of cases were in the age group of 16 yrs-50 yrs, Female (16,55.2 %) out numbers males, (13,44.8%) , student attempted to commit suicide much less than others. House wives and daily wages labourers. The poison consumed was yellow cow dung powder poison. In our study the mortality was nil.

## Conclusion

This study adds information to the existing data which may help to develop prevention strategies. Health education to the house wives and coolies and student by either by house trained faculty or physiologists and early detection of risk taking behavior in adults to some extent to prevent self harming in all patients. Ban on cow dung powder sales in grocery shops should be followed by District Authority.

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