

## Retrospective Analysis of Sociodemographic Profile and Outcome of Cases of Bleaching Powder Poisoning in Children at SBHGMC, Dhule Center

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### Abstract

*Introduction:* Accidental bleach ingestion is frequent in children. The cause and types of this accidental ingestion vary in different parts of the world depending upon the factors such as demography, socioeconomic status, education, local belief and customs.

*Objectives:* Retrospective analysis of sociodemographic profile and outcome of cases of bleaching powder poisoning in children.

*Material and methods:* It was a retrospective study. All children admitted to pediatric ward of SBHGMC, Dhule with history of ingestion of bleaching powder between January 2013 and June 2018 was analyzed.

*Result:* Forty-one children were admitted with bleaching powder poisoning. Male preponderance (61%) was noted. Most of the patients from 2 to 4 years group. Muslim's children were 96% and all were from lower socioeconomic group.

*Conclusion:* Toddlers are more vulnerable to accidental bleaching powder poisoning mainly because of ignorance on the part of parents to use and handle it properly for their work, easy accessibility for the kids playing around. No serious complication like esophageal burn or death occurred in this series of study.

**Keywords:** Bleaching power; Children 2 to 4 years. Lower socioeconomic.

### Introduction

Acute poisoning in children is an important pediatric emergency and is a worldwide problem.

The cause and types of poisoning vary in different parts of the world depending upon the factors such as demography, socioeconomic status, education, local belief and customs.<sup>1</sup> Accidental poisoning in children has been the subject of considerable study in the past decade In India. Accidental poisoning

is the twelfth leading cause of admission in the pediatric ward in India and accounts for about 1.0% of the hospitalized patients. Ingestion is the most common route of poisoning exposure accounting for 70.0% cases, with the dermal, ophthalmic and inhalation routes each occurring in about 6.0% cases.<sup>2,3</sup>

According to World Health Organization, more than three million poisonings occur in developing countries, particularly among agricultural workers.

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Pattern of poisoning in a given area depends upon the availability of poisonous substance, occupation prevalent in the society, religious and cultural influences.<sup>4</sup>

Accidental bleach ingestion is frequent in children. Household solutions contain approximately 10% sodium hypochlorite. They are rarely ingested in significant quantity, as they are extremely unpalatable. Commonly encountered effects include nausea, vomiting, and diarrhea.<sup>5</sup>

Ingestion of caustic agents is frequently reported in children, especially when children start to walk or crawl. Therefore, these accidents were considered as one of the main causes of death in children less than 5 years with the peak incidence at 2 years of age.<sup>6</sup>

The objective of the study was to study the Clinic-o-epidemiological profile and outcome of bleaching powder poisoning.

## Materials and Methods

It was a retrospective study. All children admitted to pediatric ward of SBHGMC, Dhule with history of ingestion of bleaching powder between January 2013 and June 2018 were identified and their medical records obtained from medical record department. All cases admitted to pediatric ward with history of consumption of bleaching powder were included in study. Data were analyzed using SPSS 12.0 software. Appropriate tests of significance was applied to find out the significance of the results.

## Result

Baseline characteristics of children presenting with features of poisoning Baseline characteristics (Tables 1–5)

**Table 1:** Age

Age in years	Number	Percentage
Up to 2	16	39.20
2 to 4	21	51.05
>4	4	9.75
Total	41	

**Table 2:** Sex

Gender	Number	Percentage
M	25	61
F	16	39
Total	41	100

**Table 3:** Religion

Religion	Number	Percentage
Muslim	39	96
Hindu	2	4
Total	41	100

**Table 4:** Pre-referral treatment

Treatment at	Number	Percentage
Home	32	78
Hospital	2	5
Not treated	7	17
Total	41	100

**Table 5:** Median duration between poisoning and presentation

Presentation time in hours	Number	Percentage
<4	13	61
4–12	25	31
>12	3	8
Total	41	100

Common clinical features of poisoning in children (Tables 6–8)

**Table 6:** Clinical features (n%)

Clinical presentation	Number	Percentage
Vomiting	40	99
Salivation	2	5
Diarrhea	3	6
Abdominal pain	7	15
Fever	18	36
Tachypnea	19	38
Crepitation in chest	3	6
Respiratory failure	0	0
Seizure	1	2
Coma	0	0

**Table 7:** Hospital stay

Stay in days	Number	Percentage
1 day	28	68.05
1–3 days	9	21.20
More than 3 days	4	9.75
Total	41	100

**Table 8:** Outcome of childhood poisoning cases

Outcome	Number	Percentage
Discharge	41	100
Death	0	0

## Discussion

Children admitted with Accidental bleach ingestion in pediatric ward of SBHGMC, Dhule center show marked preponderance in age group of 2 to 4 years

and males more than females. As clearly evident more muslim religion children had this accidental poisoning due to the majority of occupation of coloring to dress material belongs to this religion

Most of the children were presented earlier, and the number seeking private hospital treatment was very less (later referred to government hospital here).

Predominant symptoms at presentation were vomiting and tachypnea.

Less than 10% patient required to stay in hospital for more than 3 days. Majority were discharged after observation period of 24 hr.

No previous studies of accidental bleaching powder consumption in children are available for comparison.

### Conclusion

Toddlers are more vulnerable to accidental bleaching powder poisoning mainly because of ignorance on the part of parents to use and handle it properly for their work, easy accessibility for the kids playing around no serious complication like esophageal burn or death occurred in this series of study.

There is need to educate the parent about proper handling of material and not to allow children in the working (coloring) place.

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