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OUTCOME OF PNEUMONITIS IN CHILDREN WITH KEROSENE POISONING WITH AND WITHOUT ANTIBIOTICS

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ABSTRACT

Background: Poison is a substance capable of producing damage or dysfunction in the body by its chemical activity. It can enter the body in various ways to produce general or local effects. All cases of poisoning that results from accidental use of drugs by children due to ignorance & curiosity, are known as accidental or non intentional poisoning. Poisoning is a qualitative term used to define the potential of a chemical substance in acting adversely or deleteriously on the body. Kerosene poisoning by and large is an accident! or non intentional poisoning in children. **Objective:** In this study our main goal is to determine the clinical findings of ingestion of kerosine. **Methods:** This prospective study was conducted to see the out come of young children with kerosene poisoning with or without antibiotics. A total 50 (33 male and 17 female) children of age 1 year to 5 years were selected. **Result:** Mean age of case group were 2.96 (±1.05), mean age of control group were (4.36 ± 1.46). Mean amount of Ingestion of case group was 4.32 ml (± 1.37) mean amount of ingestion of control group was 4.36 ml (+ 1.46). This study shows there in no statistically significant difference in outcome of both group. So in this study it was seen that chemical pneumonitis in Kerosene poisoning whether treated with or without antibiotic recovered in the same fashion. **Conclusion:** Management of kerosene poisoning is symptomatic. Children with pneumonitis whether treated with or without antibiotic recovers in the same fashion.

KEYWORDS: Pneumonitis, Kerosene poisoning, hydrocarbon ingestion.

INTRODUCTION

Poison is a substance capable of producing damage or dysfunction in the body by its chemical activity. All cases of poisoning that results from accidental use of drugs by children due to ignorance & curiosity, are known as accidental or non intentional poisoning. Poisoning is a qualitative term used to define the potential of a chemical substance in acting adversely or deleteriously on the body.[1,2,3,4] Frequent use of kerosene oil, an easily available cheap fuel, for cooking in rural areas and urban slums predispose frequent accidental kerosin poisoning among children.[5,6] Kerosene ingestion predominantly affects children between ages of 1 to 5 years.[7,8,9] Kerosene is a hydrocarbon. Hydrocarbons ranked sixth in substances most frequently involved in human exposures reported to the American Association of poison control centers National Data Collection System in 1989.[10] Hydrocarbons represent a diverse group of substance and several classification systems have been used to describe them. Probably the most useful means of classifying hydrocarbons is with respect to their clinical effects. Two groups my by described (1) Hydrocarbons which are easily aspirated following ingestion and (2) Hydrocarbons that may produce systemic toxicity in addition to their aspiration potential. Kerosene belongs to the 1st group and it is an aliphatic hydrocarbon. They are poorly absorbed from the gastrointestinal tract and therefore are not expected to produce systemic effects.[10]

OBJECTIVE

General objective

- To determine the clinical findings of ingestion of kerosine poisoning with and without antibiotics.

Specific objective

- To see the complication of kerosene ingestion.
- To compare the outcome of cases with or without antibiotics.

METHODOLOGY

Type of study	It was a Prospective randomized control trial study.
Place of study	Department of Paediatrics of Dhaka Medical College Hospital, Dhaka.
Study period	March 2007- January 2007
Study population	Total population of the study was 50
Sampling technique	Non-probability purposive sampling method

Selection criteria

Inclusion criteria

- Patients with history of kerosene ingestion and presented with cough, fever, respiratory distress ±positive finding on chest X-ray.

Exclusion criteria

- Children with ingestion of kerosene but previously suffering from pneumonia. Br. Asthma, Bronchiolitis, Heart failure.
- Children already getting antibiotics due to any illness.

Study procedure and data collection

Children who will fulfill the inclusion criteria will be admitted in the indoor department of any of the medical unit of department of paediatrics of Dhaka Medical College Hospital. After admission, details history will be recorded. History will be related to when kerosene was ingested, how much ingested and what problems arise after ingestion. Then all the included children will be first undergoing physical examination relating to temperature, respiratory rate, pulse rate, pulse oximetry and thorough examination of respiratory system.

Statistical analysis

Statistical analysis was done by computer based software programmed SPSS version 12; Chi square test was done to analysis the data. P value <0.05 was considered as significant.

RESULTS

Table-I: Distribution of patients according to age (year)

Groups	N	Minimum (Age in year)	Maximum (Age in year)	Mean (Age in year)	Std. Deviation
Case	25	1.00	4.50	2.9600	1.05987
Control	25	2.00	7.00	4.3600	1.46856

The table I shows mean age of case group were 2.96 (±1.05) mean age of control group were (4.36+ 1.46).

Table-2: Distribution of patients according to sex.

Groups	Sex		Total
	Male	Female	
Case	17(68)	8(32)	25(100)
Control	16(64)	9(36)	25(100)
Total	33	17	50

Table II shows in case group 17 were male and 8 were female and in control group 16 were male and 9 were female.

Table-3: Distribution of patients according to amount ingested.

Groups	N	Minimum	Maximum	Mean	Std. Deviation
Case	25	2.00	7.00	4.3200	1.37598
Control	25	2.00	7.00	4.3600	1.46856

The table III shows mean amount of Ingestion of case group was 4.32 ml (± 1.37) mean amount of ingestion of control group was 4.36 ml (+ 1.46).

Table-4: Distribution of patients according to Cough.

Group	Cough		
	Present	Absent	Total
Case	21(84)	4(16)	25(100)
Control	20(80)	5(20)	25(100)
Total	41 (82)	9 (18)	50

The table shows number of patients presented with cough in case group was 21 and absent in 4 patients and in control group number of patients presented with cough were 20 and absent in 5 patients.

Table-5: Distribution of patients according to Fever.

Group	Fever		
	Present	Absent	Total
Case	20(80)	5(20)	25(100)
Control	21(84)	4(16)	25(100)
Total	41 (82)	9 (18)	50

The table V shows number of patients presented with fever in case group was 20 and absent in 5 patients and in control group number of patients presented with fever were 21 and absent in 4 patients.

Table-6: Distribution of patients according to Breathing difficulty.

Group	Breathing difficulty		
	Present	Absent	Total
Case	17(68)	8(32)	25(100)
Control	18(72)	7(28)	25(100)
Total	35 (70)	15 (30)	50

The graph shows number of patients presented with breathing difficulty in case group was 17 and absent in 8 patients and in control group number of patients presented with breathing difficulty were 18 and in 7 patients.

Table-7 Distribution of patients according to Respiratory Rate.

Groups	N	Minimum	Maximum	Mean	Std. Deviation
Case	25	28.00	60.00	49.5200	9.38580
Control	25	30.00	58.00	49.2000	8.30662

The table VII shows mean respiratory rate in case group was + 9.38 and mean respiratory rate in control group was 49.20± 8.30.

DISCUSSION

This randomized control trial provides the first opportunity to see the outcome of pneumonitis in children with kerosene poisoning with or without antibiotics.[11] However, some literature and study has described that prophylactic antibiotic has no role in management of kerosene poisoning.[12] Anas et al established guidelines for the management of patients with hydrocarbon ingestion. The guideline described that prophylactic antibiotics should not be routinely prescribed.[13] In a study it is established that there is no significant difference in the median duration of hospital stay between the group that received prophylactic antibiotics and the one that did not and their findings do not support the use of prophylactic antibiotics in patients with hydrocarbon ingestion.[14]

In our study, several variables are noted such as age, amount of ingestion variable clinical findings after ingestion, pulse oximetry, complete blood count and chest X-ray findings the age for peak incidence of kerosene is 1-5 years. It is consistent with present study in which mean age group was 2.96 year in case group and 3.36 year in control group.

In general kerosene has a bad taste. So large volumes are rarely ingested and ingestion of even 1 ml kerosene oil is significantly related to pulmonary complication.35 In our study, mean amount of kerosene ingestion was 4.3 ml.

X-ray findings showed abnormality in 90% patients. In a study there is reported 86% - 92% patients with roentgenologic change following kerosene ingestion.[15]

In one study showed among 86 patients with kerosene and other hydrocarbon ingestion, 92% had positive roentgenogram and in another retrospective study, chest abnormality showed bilateral lower lobe infiltrate 34%, Right lower lobe infiltrates 6%, left lower lobe infiltrates 3%, pleural effusion 2%, pneumothorax 2%.

Antibiotic was given in 50% patients who were considered as cases. The drug was Injection Ampicillin 100 mg/kg/day in 4 divided dose. 50% patients were not given any antibiotic. Follow up was given according to

sign, symptoms of structured questionnaire during admission; after 6 hours, after 12 hours after 24 hours. and after 48 hours. All patients were done chest X-ray 6 hours after ingestion of Kerosene, patients were discharged after 48 hours and asked for follow up visit after 7 days for clinical improvement and radiological improvement. In this study, 12 cases were drop out, 5 cases did not tum out in regular follow up after 7 days, 2 cases left hospital on DORB. Check X-ray was not possible to do in 5 cases of those who came for follow up. As our outcome was either clinical or radiological cure it did not hamper the study.

CONCLUSION

Management of kerosene poisoning is symptomatic. Children with pneumonitis whether treated with or without antibiotic recovers in the same fashion.

REFERENCES

1. Machado B, Cross K, Snodgrass W. Accidental hydrocarbon ingestion cases telephoned to a regional poison center. Ann Emerg Med, 1988; 17: 804-807.
2. Reed RP, Conradie FM. The epidemiology and clinical features of paraffin (kerosene) poisoning in rural African children. Ann Trop Paediatr, 1997; 17: 49-55.
3. Nagi N Abdulallah ZA. Kerosene poisoning in children in Iraq. Postgrad Med J., 1995; 71: 419-422.
4. Ellis JB, Krug · Roberston J, Hay IT, MacIntyre U. Paraffin ingestion the problem. S Afr Med J., 1994; 84: 727- 730.
5. Ellis JB, Krug Roberston J, Hay IT, Macintyre U. Paraffin ingestion-the problem. S Afr Med J., 1994; 84: 727-730. [PubMed Citation]
6. Lifshitz M, Gavrilov V. Acute poisoning in children. IMAJ., 2000; 2: 504-506. [PubMed Citation]
7. M. Jayashree, S. Singhi and A.Gupta Predictors of Outcome in Children with Hydrocarbon Poisoning Receiving Intensive care. Indian Pediatr, 2006; 43: 715-719.
8. Gupta P, Singh RP, Murali MV, Bhargava SK, Sharma P. Kerosene oil poisoning-a childhood menace. Indian pediatr, 1992; 29: 979-984.
9. Litovitz TL, Schmitz BF, Holm KC. 1988 annual report of the American Association of Poison Control Centers National Data correction System. Am J Emerg Med, 1989 Sep; 7(5): 495-545.
10. Litovitz T. Hydrocarbon ingestions. Entechnology, 1983 Mar; 62(3): 142-7.
11. Prasad R, Muthusami S, Pandey N et al, Kerosene poisoning pediatric on call.
12. Training manual on Basic skill of poisoning management, 52-53.
13. Jayashree M, Singhi S, Gupta A Indian pediatr, 2006; 43: 715-719.
14. Wolfsdorf, J. and Paed, D. (1976). Kerosene intoxication: an experimental approach to the etiology of the CNS manifestations in primates. J Pediatr, 88: 1037-40.
15. John P, Jimenez, M.D., Richard G et al, pulmonary complications following furniture polish ingestion, a report of 21 cases, 98(2): 323-333.