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COMPLICATIONS OF PARAPHENYLENE POISONING

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ABSTRACT

Objective: Frequency of complication of Paraphenylene poisoning. **Methods:** This cross sectional study was carried out at Emergency Department of Mayo hospital Lahore during 2017 January to 2018. The cases with PPD poisoning assessed on history irrespective of gender and age were included. They were assessed during hospital for various complications. **Results:** In the present study there were total 100 cases of PPD poisoning out of which 71% were females and 29% males. The mean age of the cases was 29.67±8.21years. The mean duration of presentation was 7.98±1.09 hours (table I). Complications were seen in almost all the cases but few had overlap of these symptoms. The most common presentation was seen as dysphagia which was observed in 65% of the cases and this was followed by hyperkalemia 45%, maxillofacial edema 35% and acute renal failure 35%. **Conclusion:** PPD poisoning is not uncommon and they lead to complication in almost all cases and most common one is dysphagia.

KEYWORDS: PPD, Dysphagia, ARF.

INTRODUCTION

The trends in suicide is increasing day be day due to change in the mental status and also the vulnerability of the younger generation to modern day stress. According to a survey around a million number of deaths are seen due to suicidal attempts and majority of these cases are in the developing countries specially south Asia and Africar.[1-2]

There are number of agents that are being used for this and among them Paraphenylene Diamine also knows as PPPD is recently gaining popularity which is used for hair dye considering its cheap prices and easy availability.[3]

PPD is a substance that quickly dissolves in hydrogen peroxide and then in the body, it is metabolized by cytochrome P450 system leading to its oxidation and enduing up in a very toxic product that can escalate different types of reaction and even anaphylaxis.[4-5] Patients can present with range of symptoms and signs depending upon the route of intoxication, amount of its used and duration before reporting to the hospitals.[6-8] The sings and symptoms include anaphylaxis reaction with swelling over the face and the oral cavity, dysphagia, and also injury to the pharynx, tongue and upper gastrointestinal tract (GIT). It can also causes acute hepatitis, renal failure, different types of arrhythmias and electrolyte imbalance.[9-10]

OBJECTIVE

Frequency of complication of Paraphenylene poisoning.

MATERIAL AND METHODS

This cross sectional study was carried out at Emergency Department of Mayo hospital Lahore during 2017 January to 2018. The cases with PPD poisoning assessed on history irrespective of gender and age were included. they were assessed during hospital for various complications.

Statistical analysis

The data was assessed by using SPSS version 23. Frequencies and percentages were calculated for various complications and mean and standard deviation for quantitative data.

RESULTS

In the present study there were total 100 cases of PPD poisoning out of which 71% were females and 29% males. The mean age of the cases was 29.67±8.21years. The mean duration of presentation was 7.98±1.09 hours (table I). Complications were seen in almost all the cases but few had overlap of these symptoms. The most common presentation was seen as dysphagia which was observed in 65% of the cases and this was followed by hyperkalemia 45%, maxillofacial edema 35% and acute renal failure 35% as in table II.

Table No. I: Demographics.

	Mean	Range
Age	29.67±8.21	13-55 years
Weight	49.24±12.44	25-102 kg
Duration of poisoning (hours)	7.98±1.09	1-24

Table No. II: Types of Complications n= 100.

Complications	N	%
Acute renal failure	34	34%
Cardiac arrhythmia	26	26%
Acute hepatitis	15	
Dysphagia	65	65%
Hyperkalemia	46	46%
Maxilofacial edema	35	35%

DISCUSSION

Paraphenylene Diamine also known as Kala pathar is a hair dying agent. It is widely used to color the hair due to its cheap price and easy availability across the developing third world. The properties that lead to its easy use share the same chance and risks leading to its intoxication and hence ending up in range of complications including fatal outcomes.

In the present study, complications were seen in almost all the cases but few had overlap of these symptoms. The most common presentation was seen as dysphagia which was observed in 65% of the cases and this was followed by hyperkalemia 45%, maxillofacial edema 35% and acute renal failure 35%. These results were close to the findings of the studies done in the past. According to a survey carried out by Khuhro et al similar was seen and they also observed complication in almost 100% of their 16 cases.[11] The studies done by the Kellel H et al and Prabhakaran AC et al also revealed that similar percentage had it.[12-13] Hyperkalemia can be due to rhabdomyolysis that is resulted due to toxic injury of this substance to the muscular system. There was almost equal distribution of acute renal failure and arrhythmia with slightly higher number of renal failure. The direct toxicity of the substance to kidneys and the added factor of rhabdomyolysis can be the cause of it. The studies done by Tiwari D et al also found renal failure in higher number and found as higher as 38% of their cases.[16]

CONCLUSION

PPD poisoning is not uncommon and they lead to complication in almost all cases and most common one is dysphagia.

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