



CODEN [USA]: IAJPB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3270894>
Available online at: <http://www.iajps.com>

Research Article

PARAPHENYLENEDIAMINE POISONING: SCIENTIFIC STRUCTURES, DIFFICULTIES IN ADDITION RESULT IN THE TERTIARY CARE INSTITUTION

¹Dr. Rafia Arshad, ²Dr. Fatima Bhatti, ³Dr Sajida Razzaq, ⁴Ammad Javaid Chaudhary.¹WMO Incharge at BHU Mulhal Mughlan Chakwal, ²WMO at Samina Nisar Hospital Sialkot,³Tehsil Headquarter Hospital Chunian, Kasur, ⁴House Officer, Mayo Hospital Lahore

Article Received: May 2019

Accepted: June 2019

Published: July 2019

Abstract:

Background: Paraphenylenediamine (PPD) is the material existing in hair colors that is absorbed in body cytochrome P455 organization, in addition is additional oxidized to the poisonous merchandise which might lead to numerous structure letdown.

Objective: The objective of our existing research regulates occurrence of medical structures, difficulties in addition result in PPD intoxicated cases acknowledged to Intensive Care Unit of Services Hospital, Lahore Pakistan from May 2018 to December 2018.

Methodology: Our current retrospective research remained led at ICU of Services Hospital, Lahore Pakistan from May 2018 to December 2018. The thorough medical past remained noted counting demographic outline, indications symbols also consequence. Judgement of PPD poisoning remained grounded on past of digestion also medical appearances.

Results: Here stayed 1040 respondents of hair dye (PPD) poisoning. Here remained 360 (34.51%) men also 680 (65.49%) women (average age 23.09±9.43 years). Dysphagia remained detected in 1040, cervicofacial puffiness in 940 (91.52%), dyspnea in 929 (87.83%), widespread physique pain by muscle weakness in 714 (69.92%), reduced urine production in 190 (18.94%) also chocolate brown color urine in 778 (76.20%) respondents. Concerning cause of digestion of poison, suicidal purpose remained detected in 1023 (99.92%), accidental digestion in 9 (0.78%), homicidal in 2 (1.095%) also in 3 (1.993%) case's purpose could not remain resolute. Altogether cases expended resident stone grounded hair dye through oral course. Forty cases stayed lost to follow up. Death degree in rest 996 cases stayed 15.6% (n=140) in man also 18.54% (n=174) in women.

Conclusion: PPD poisoning remained extra known in women (67%) for suicidal resolve owing to calm obtainability, also remains related by the general death degree of 32.7%.

Corresponding author:**Dr. Rafia Arshad,**

WMO Incharge at BHU Mulhal Mughlan Chakwal.

QR code



Please cite this article in press Rafia Arshad et al., *Paraphenylenediamine Poisoning: Scientific Structures, Difficulties In Addition Result In The Tertiary Care Institution.*, Indo Am. J. P. Sci, 2019; 07[07].

INTRODUCTION:

Paraphenylenediamine (PPD) remains an aromatic amine, alanine imitative nearby known as 'kala pathar'. This is hard & white in bodily shape nonetheless on oxidation rapidly variations to the dark color. PPD was experienced in manufacturing & makeups, though, this key usage is in hair colors also in mixture by henna.

Sum of rumors of lethal digestion of hair color comprising PPD were available [1]. This might origin rhabdomyolysis in addition severe kidney harm, flaccid paralysis, plain gastrointestinal appearances, cardio poisonousness in addition arrhythmias [2]. Here are not any certain indicative measures, in addition judgment necessitates the huge grade of thought grounded on complete past, medical inspection & laboratory examination [3]. The purpose of our existing research was to measure reason, demonstration & result of the illness in the huge regiment of alike cases which were offered to the current Intensive Care Unit. Paraphenylenediamine (PPD) is the material existing in hair colors that is absorbed in body cytochrome P455 organization, in addition is additional oxidized to the poisonous merchandise which might lead to numerous structure letdown [4]. The thorough medical past remained noted counting demographic outline, indications symbols also consequence. Judgement of PPD poisoning remained grounded on past of digestion also medical appearances. The current research was led to regulate & document occurrence of diverse medical structures, difficulties & result in PPD intoxicated cases at Services Hospital Lahore Pakistan [5].

RESULTS:

Record files of one thousand and forty (1040) cases by PPD poisoning remained studied, out of those 360 (34.92%) remained men in addition 684 (66.10%) remained women by age variety of 13 to 41 years (average 23.09 ± 9.43 years) (Table.1). Concerning explanations of digestion, suicidal meaning remained detected in 1022 (97.93%), in 9 (1.79%) cases this remained inadvertent, in two (0.098%) homicidal in addition in 3 (1.194%) cases meaning could not remain resolute. Altogether 1036 cases swallowed resident completed, black stone created hair dye through oral route. The time intermission to spread hospital extended from 2 hours to 1 day by the average period of 6.37 ± 5.68 hrz. 70% of cases ($n=724$) remained transported to hospital emergency afterward 5 ± 3.77 hours, 25.82% inside $3-5 \pm 2.38$ hour also solitary 54 cases (6.15%) remained transported inside 3 ± 1.46 hours of digestion (Table 1). Cases that stretched hospital emergency (initial medicinal

consideration) initial had fewer illness in addition death. Serum creatinine also CPK remained elevated (Table 3). Supreme promotion of CPK remained up to 90,500 in addition serum creatinine up to 13 mg/dl. Those cases desired numerous assemblies of dialysis, foremost to amplified hospital stay, injury also death. Electrolyte irregularities remained described in 5.53% cases (Table 3). Hyperkalemia remained related by augmented death notwithstanding suitable medicinal organization also dialysis. As regards outcome, 682 patients (52.6%) recovered, and 311 died. Here stayed 1040 respondents of hair dye (PPD) poisoning. Here remained 360 (34.51%) men also 680 (65.49%) women (average age 23.09 ± 9.43 years). Dysphagia remained detected in 1040, cervicofacial puffiness in 940 (91.52%), dyspnea in 929 (87.83%), widespread physique pain by muscle weakness in 714 (69.92%), reduced urine production in 190 (18.94%) also chocolate brown color urine in 778 (76.20%) respondents. Concerning cause of digestion of poison, suicidal purpose remained detected in 1023 (99.92%), accidental digestion in 9 (0.78%), homicidal in 2 (1.095%) also in 3 (1.993%) case's purpose could not remain resolute. Altogether cases expended resident stone grounded hair dye through oral course. Forty cases stayed lost to follow up. Death degree in rest 996 cases stayed 15.6% ($n=140$) in man also 18.54% ($n=174$) in women. Thirty-nine patients were referred to Karachi and were lost to follow-up. Mortality rate in 993 patients who were followed up was 31.67% with 139 males (14.15%) and 172 females (17.52%) (Table 2).

METHODOLOGY:

The current reflective, observational research remained led on 1040 cases of PPD poisoning, hospitalized in the current ICU also remained mentioned from medical units of Services Hospital, Lahore Pakistan from May 2018 to December 2018. Official endorsement remained found from Moral Appraisal Group of hospital. Information remained composed from cases hospital record files. Analysis of PPD poisoning remained grounded on past of digestion also medical appearances, meaning of poisoning, period amongst consumption of poison & primary health consideration, nature of indications in addition physical inspection in addition difficulties. Intravenous corticosteroid for angioneurotic edema remained key stay of cure. Vasopressors remained exercised if hypotension persevered even afterwards passable fluid treatment. Compulsory alkaline diuresis stayed exercised to avert myoglobin interceded renal tubular damage. Hemodialysis remained completed in designated patients of renal disappointment, metabolic acidosis also hyperkalemia. The thorough medical past

remained noted counting demographic outline, indications symbols also consequence. Judgement of PPD poisoning remained grounded on past of digestion also medical appearances. Laboratory inquiries noted remained serum leucocyte count, SGPT, serum bilirubin, serum, potassium, and calcium, serum CPK in addition indication of myoglobinuria.

RESULTS:

Record files of one thousand and forty (1040) respondents by PPD poisoning remained studied, out of those 360 (34.91%) remained men also 685 (67.08%) remained women by age variety of 14 to 42 years (average 23.09 ± 9.43 years) (Table.1). Concerning details of digestion, suicidal aim remained detected in 1026 (97.95%), in 9 (1.72%) cases this remained accidental, in 2 (1.098%) homicidal besides in 3 (0.194%) cases meaning could not remain resolute. Altogether 1040 cases consumed resident created, black stone-based hair color through oral way. The time taken to reach hospital extended from 2 hours to 1 day by the average period of 6.37 ± 5.69 h. 80% of cases (n=724) remained transported to hospital

emergency afterward 5 ± 3.78 hours, 25.82% inside $3-5 \pm 2.40$ hours in addition solitary 54 cases (6.15%) remained carried inside 3 ± 1.46 hours of digestion (Table 1). Cases that reached health care facility emergency initial had fewer illness & death. The subsequent known performance remained dyspnea, widespread body pain & muscle weakness, hypotension in addition two-sided basal crepitation's (Table 2). Those cases had past of instant believing of great quantity of hair color in addition established structures redolent of myocarditis directly in addition otherwise advanced. Chocolate brown / cola colored urine remained existing in 76.20% patients, particularly in these that got noticeable muscle agony, sensitivity in addition cervicofacial swelling. As favors result, 686 cases (53.7%) healthier, in addition 313 deceased. Forty cases remained mentioned to Lahore also remained lost to follow-up. Death proportion in 996 cases that remained followed up remained 32.68% through 140 men (15.17%) also 175 women (18.54%) (Table 2). Protracted hospital admittance remained essential in 74.86% cases. Cardiotoxicity in addition renal letdown accounted for death in 22.56 % patients.

Table 1: Demographic variables, period, route, intention, consequence, in addition death in respondents offering through PPD poisoning:

Variables	Sum of respondents	percentage
Sex		
Men	352	32.90
Women	684	67.10
Period of poisoning		
Inside 3 ± 0.46 hrz	723	70.05
Inside $3-5 \pm 2.38$ hrz	53	5.14
More than 5 ± 3.77 hrz	256	24.81
Way of poisoning		
Oral	1029	98
00 00	03	1.24
Percutaneous 00	01	0.23
Committed of poisoning		
Suicidal	1023	99.95
Accidental	02	0.193
Undetermined intention	08	0.77
Result		
Renal retrieval	209	21.95
Comprehensive	889	95.97
Death (exclusive of respondents referred to Lahore)		
Entire	314	32.68
Men	172	17.52
Women	139	14.15
Death owing to cardio toxicity	62	19.61
Death owing to renal letdown	68	21.55

Table 2:0 Medical signs also physical symbols detected in PPD poisoning:

Medical Symbols	Sum of respondents	Percentage
Cervicofacial puffiness	927	89.82
Dysphagia	712	68.99
Dyspnea	1040	100
Generalized body pain by muscle weakness	939	90.99
Chocolate brown color urine	989	95.83
Lessened urine output	958	92.83
Tachypnea (RR>19/minute)	776	75.19
Tachycardia (HR>100/minute)	825	79.94
Reduced air entry owing to laryngeal edema	185	17.93
Cyanosis	103	9.98
Hypotension	206	19.96
Two-sided basal crepitation	196	18.99

Table 3: Inquiries at time of admission in PPD poisoning.

Investigation	Normal Value	Increased
Leucocyte count 4000-11000	32	(3.92)
Liver profile		
SGPT < 40 IU	812	(78.68)
SGOT < 40 IU	815	(78.97)
S. Bilirubin < 1mg/dl	319	(30.91)
Alkaline phosphatase > 120 IU	381	(36.91)
Renal profile		
S creatinine < 1.4mg/dl	939	(91.90)
S.Na+ 138-148 meq/L	16	(1.55)
S.K+ 3.5-5 meq/L	31	(2.91)
S. Ca++ 9-10.5meq/L	09	(0.79)
Urine		
Routine/microscopic for Myoglobin	≥ 190 959	(92.93)
CPK level	+ 92	(8.91)

DISCUSSION:

PPD (C6H8N2) is maximum known also inexpensive procedure of hair color accessible in Africa and Europe, recognized as stone color, also comprises maximum attention of PPD (from 72 to 91%). Additional branded hair dyes comprise slighter attentions of PPD, characteristically from 3 to 11%. The development of oxide derivatives of PPD just like benzoquinone diamide is accountable for obliteration of muscle cells through the apparatus of skin lipid peroxidation that leads to muscle necrosis & also generates lethal properties on numerous structures through producing angio-neurotic edema, also rhabdomyolysis [6]. Owing to their unsuitable handling, relaxed obtainability also little cost, this becomes the most known mode of self-poisoning in rustic parts of Pakistan also Bangladesh. Furthermore, absenteeism of precise antidote is similarly the substance of worry about their lethal results [7]. Women had originated to remain extra exaggerated through hair dye digestion intoxication. It is since women are visible to PPD more than males as henna

remains experienced to improve shade of hair & similarly as the covering enhancing for creation tattoos. Those results remain alike to researches led through additional scholars. Those results remain in line by additional researches; Akbar et al from Pakistan described suicidal purpose in 62%, Amira et al. from Iran 83% also Shankar et al. from Bangladesh as 91%. Those results display their maximum usage for suicide in addition here must remain few steps engaged about their obtainability [8]. The inadvertent contact of PPD is not hugely known in established nations, neither is their experience concluded membrane. The average period to attain in hospital remained noted 6.37 ± 5.68 hrz. Their worth is alike to that of Shankar et al. Those account this as 5.64 ± 2.74 h. Concentrated helpful care, suitable interferences counting tracheostomy remains backbone of organization [9]. PPD comprising hair colors remain the excessive danger also they were disqualified in nations comparable Spain, Germany & Italy. Though, in our country this remain still frequently exercised owing to relaxed obtainability also admission in

numerous portions also desire to remain disqualified. Public education in addition consciousness of PPD connected health dangers remains immediately essential so that PPD should remain exercised for 'dyeing solitary also not for dying'. Furthermore, requirement of excellence research study would remain stressed in command to discover actual antidote for PPD to decrease illness also death [10].

CONCLUSION:

PPD poisoning in cases acknowledged to the Intensive Care Unit remained realized extra frequently in women cases (67%). The maximum known offering signs were dysphagia, cervicofacial swelling and dyspnea, & general death was 32.8% in 996 cases that remained shadowed. Mainstream of cases had occupied this for suicide.

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