

# Research in Pharmacy and Health Sciences

## Case Report

### HAIR DYE POISONING: A CASE REPORT

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#### ABSTRACT :

Hair dye has become more widely used domestic product for suicidal attempts. In this case, we have observed rare complications of a local hair dye to an extent of life threatening condition. There is no specific antidote for such poisoning and supportive therapy can save the life of patient. In order to avoid the incorrect usage of domestic products, awareness programs need to be conducted to educate the public.

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#### INTRODUCTION:

Hair dye is an emulsion based hair dye commonly used in India. The main ingredients of the dye are paraphenylene diamine, resorcinol, propylene glycol, sodium ethylene diamine tetra acetic acid (EDTA), preservatives and perfumes<sup>[1]</sup>. The main compound that induces toxicity is Paraphenylene diamine (PPD). It can cause rhabdomyolysis, laryngeal edema, severe metabolic acidosis, acute renal failure (ARF) and myocarditis<sup>[2]</sup>. This case report serves to highlight these complications of the hair dye toxicity.

#### Case report

A 70 years old female was brought to emergency department of the hospital with the complaint of intentional poisoning by hair dye at around 8pm. When brought to emergency, the patient was unconscious, responding to painful stimuli and presented with swelling of lips and tongue, sublingual and submandibular oedema, pharyngeal oedema, and oral secretions were present. Brown colored stains of liquid were noted on patient's clothes suggesting that patient was poisoned by PPD. There is no history of vomiting and stridor. Patient also presented with complaints of difficulty in breathing and difficulty in swallowing. Tracheostomy was done.

On examination pulse rate was 120/min and blood pressure was 170/100mmHg, no cyanosis was present. All the examinations of abdominal, respiratory, central nervous system and cardiovascular systems were found to be normal. Upon performing laboratory investigations Hemoglobin, differential count, total count, red blood

count, sodium, potassium, calcium, chlorine were within normal range, electrocardiogram, 2D-ECHO were normal. Her blood urea nitrogen and serum creatinine were 44mg/dL and 1.6mg/dL respectively.

The patient was prescribed with amoxicillin and clavulanate potassium (augmentin) 1200mg ivbd, hydrocortisone 100mg iv tid, inj. Furosemide (lasix) 20mg iv bd, IV fluids (3 bottles normal saline) @ 100ml/Hr. Subsequently, the symptoms of the patient were slowly resolved and the tracheostomy tube was removed on 4<sup>th</sup> day. Patient complains of abdominal pain, dysphagia and oral ulcers on 6<sup>th</sup> day and for which Benzalkoniumchloride and Choline Salicylate, local application was prescribed. On the 9<sup>th</sup> day of admission the patient was discharged. At the time of discharge the patient was asymptomatic.

#### Discussion

Hair dye is the most widely used product in India<sup>[1]</sup>. It has potent nephrotoxic cocktail, containing PPD, resorcinol and propylene glycol. PPD is coal tar derivative, on oxidation it produces Bondrowski's base, which is allergenic, mutagenic and highly toxic<sup>[3]</sup>. The characteristic features of PPD poisoning include severe angioneurotoedema, rhabdomyolysis and intravascular hemolysis with hemoglobinuria culminating in ARF<sup>[4]</sup>.

The clinical features were almost unique in all the patients and in the absence of laboratory facilities in many developing countries the angioedema of neck, face and hard bulging of tongue, chocolate brown colored urine can be used for medical diagnosis<sup>[6]</sup>. These manifestations were

evident in our patient. Accidental or intentional intake of poison results in systemic toxicity depending on the dose. Specific antidote for hair dye poisoning is not available<sup>[7]</sup>. Therapy is the supportive for the complaints at the time of presentation. Management of the patient depends on the amount of poison consumed and the time gap between poison intake and onset of therapy<sup>[5]</sup>.

### Conclusion

Hair dye poisoning is a life threatening condition and has become most common in India. It requires emergency management of anaphylaxis. Although there is no specific antidote timely intervention and supportive care can save the life of the patient. The time of development of renal failure is uncertain after PPD intoxication; hence all the patients should be considered monitoring for development of renal complications. Awareness programs have to be conducted at various levels in order to avoid incorrect usage of common domestic products in the society.

### REFERENCES:

1. Bhargava. P, Matthew.P, et al. Hair dye poisoning JAss. Physicians India, 2007, volume 55; page.no. 871-872.

2. Rammurthy P, Netto GM, Sunil KN, Suresh. C.Super Vasmol hair dye: an emerging fatal poison, Ind J Clin Pract, 2014; 25(7):660-662.
3. Reddy AG, RajaVC, Reddy SM, VenugopalV, KumarSE, Hair dye (Super Vasmol-33) poisoning-a case report, International JAllied Med ScieClinResearch, Oct-Dec 2014,Volume 2(4),Page.no. 279-281.
4. Neki.N.S., Ankur J, Rohit B, Mohit.MJ, Hair Dye poisoning – A rare case Report, JAIM 2014;3(6):72-73.
5. Prabhakar YVS, KamalakarK, Hair dye poisoning-a report of three cases,Journal of Dr. NTR University of Health Sciences 2012;1:46-48.
6. Chowdareddy N, Shashidhar G, Super Vasmol 33 Poisoning: Case report, Sch. J. App. Med. Sci., 2014; 2:442-443.
7. Praveen Kumar AS., Keerthi.T, Dutta.TK, Super Vasomol hair dye poisoning, Toxicol Int. 2012;19(1):77-78.



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