



STUDY ON SUPERVASMOL DYE POISONING

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Abstract : A study on supervasmol dye poisoning was conducted in 235 patients in a tertiary care hospital in South India Tirunelveli Medical College over 2 years chart review including records of clinical presentation, laboratory findings treatment details were carried out.

Keyword : Supervasmol, Laryngeal edema, Tracheostomy, Rhabdomyolysis, Oliguria, FAD therapy.

INTRODUCTION: Supervasmol a cheap and widely available hair dye is emerging as a major cause of suicidal poisoning in India, more reported in developing countries in Asia & Africa. **CASE STUDY:** Study was conducted in 235 patients with hair dye poisoning in a tertiary care hospital in South India over 2 years (May 2010 – March 2012) . Supervasmol dye is commonly used as an emulsion based hair dye due to its easy availability , technically easy to use, low cost & nice smell. Due to the same reasons it is being deliberately used for self harm in India. A prospective study was conducted in the intensive medical care unit where all patients were questioned regarding time, duration and amount of consumption of the dye. Clinical symptoms, detailed clinical examination was done and laboratory investigations ordered. Treatment was initiated immediately after admission, Forced alkaline diuresis was initiated after ruling out renal failure. Emergent tracheostomy was done for those patients with upper airway compromise and dialysis initiated in those patients who developed renal failure. **ANALYSIS OF CLINICAL FEATURES & LABORATORY FINDINGS** The predominant clinical features in the study group includes throat pain and hoarseness of voice seen in 74.6% of patients, cervico-facial edema in 53.19 %, shortness of breath in 53 %, decreased urine output in 12.76 % and abdominal pain in 63.83% of patients. Patients who have consumed less than 10ml of the hair dye in a diluted form did not have any clinical manifestations, but those who consumed more than 10 ml in a concentrated form invariably presented with symptoms.

Laboratory parameters revealed leucocytosis in 92 % of patients, elevated transaminases in 100 % cases, elevated total CPK in 72 % of patients, hypocalcemia and hyperphosphatemia in the same group.

Symptoms & signs at Presentation	No. of Patients	Percentage	Lab Test	Mean (S.D)	Range
Throat pain & Hoarseness	175	74.46%	Hb (gms/dl)	13.9	11.4 – 17.6
Vomiting	160	68.08%	WBC (cells/cumm)	22592.3	6900– 38,200
Oliguria	30	12.76%	Plateletcount (cells/cumm)	2,87,125	1,95000 to 3,78,000
Dark coloured urine	40	17.02%	CPK (U/L)	79053.5	120 - 500,000
Cervico-facial Edema	125	53.19%	S.Ca (mg/dL)	7.6	5.5 – 9.1
Dyspnoea	125	53.19%	S.Cr (mg/dL)	2.4	0.5 -9.5
Altered sensorium	12	5.10%	S.Na (mmol/L)	139	129- 147
Abdominal Pain	150	63.83%	S.K (mmol/L)	4.2	2.9- 6.5
Increased Salivation	130	55.32%	S.Protein (gms/dL)	6.8	4.2-8.9
			S.Total Albumin(gms/dL)	3.7	1.8 – 4.9
			SGOT (U/L)	2380.4	33 - 6560
			SGPT (U/L)	533.5	46 - 1298
			SAP (U/L)	68.4	40 - 101

Summary of clinical features and laboratory values DISCUSSION

The clinical & laboratory features of supervasmol dye poisoning are due to the main ingredients PPD & RESORCINOL. Paraphenylenediamine is a key ingredient for colour enhancement.

CLINICAL FEATURES: Cervicofacial edema, Upper airway tract edema, Laryngeal edema with respiratory distress requiring emergency tracheostomy & mechanical ventilation. Rhabdomyolysis, cola colored urine, metabolic acidosis, Acute Renal Failure, Oliguria, hyperkalemia & shock occurs.

RESORCINOL is phenolic chemical used in photography, Tanning & cosmetic industry. Rapidly absorbed from the GIT, rapidly metabolized & excreted. It causes convulsions, salivation, dyspnoea, emaciation & hyperemia of the GI tract. Lowest lethal was dose 29mg/kg body weight. Nausea, met-hemoglobinemia, pallor, hypotension, pulmonary edema may also occur.

TREATMENT

Early tracheostomy for patients with cervico-facial edema & laryngeal edema
Mechanical ventilation if necessary
Forced alkaline diuresis -

1. NS – 500 ML
2. 5% DEXTROSE with 100 ml sodium bicarbonate
3. 5% DEXTROSE with 5ml potassium chloride -on alternate cycles (1+2+3 over 3 hours, urine output must be over >6ml / mt . If urine output < 3ml/mt give Inj Frusemide 20- 40 mg iv stat .If urine output does not improve STOP FAD . Dialyse if necessary.

MORBIDITY & MORTALITY

1. Paraphenylenediamine (PPD), the main component of the hair dye causes severe edema of the face & neck causing upper airway obstruction requiring emergency tracheostomy
2. Acute renal failure occurs due to rhabdomyolysis or due to the component resorcinol present in the hair dye.
3. Patients may present with features of hypocalcemia characterised by tetany. This may be due to chelation of calcium by sodium EDTA which is a component of the dye or as a part of rhabdomyolysis and renal failure
4. 6 patients admitted after 4 days of consumption with established renal failure did not respond to haemodialysis and died after 2 days. Trends towards poor outcome were

1. Late presentation
2. Those requiring tracheostomy
3. Presentation with a low Glasgow Coma Scale score or seizures
4. Renal failure and delayed initiation of dialysis.

RESULTS :

1. 95% of patients were women & the mean age was 27.2 years.
2. Predominant symptoms- cervicofacial edema, pain, tongue edema, upper airway edema, laryngeal edema & respiratory failure. Cola coloured urine, oliguria & shock. Dyspnoea, tachypnoea, hypotension, tachycardia, profuse sweating & pulmonary edema in some of the patients.
3. Patients who have consumed > 10 ml manifested with predominant clinical symptoms.
4. Patients who have consumed the dye in diluted form (mixed with water) presents with less predominant clinical symptoms.



Supervasmol hair dye



**Cervicofacial & laryngeal edema
Urgent Tracheostomy in the same patient**

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