

A Rare Poisoning of Savlon in an Obstetric Patient with Delirium Tremens: A Case Report

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Abstract

A 32 years old female with 35 weeks pregnancy, G2P1 A0, chronic alcoholic for the past 2 years (around 30 ml-60 ml/day according to relatives) presented to emergency services three hours after alleged history of savlon poisoning with complaints of moderate to severe pain in abdomen, periumbilical, non-radiating and associated with multiple episodes of vomiting, dyspnoea and altered sensorium. There was no history of haemetemesis or seizures. The patient had unintentionally ingested savlon at night time and vomited after 20 minutes of ingestion. The patient becomes restless and vomited four times in 20 minutes. After that the relatives brought her to emergency department of the hospital. The patient developed changes due to savlon ingestion causing aspiration and hypoxia. The patient had cardiac arrest in the emergency department and revived in 75 seconds. Rest of the management was done in ICU where patient initially extubated but next day due to alcohol withdrawal delirium tremens and pregnancy per se the patient was reintubated. The patient stayed in ICU for 16 days and then expired.

Keywords: Savlon poisoning; Alcohol withdrawal; Delirium tremens; Cardiac arrest

Introduction

Poisoning has emerged as a major health-threat in developing countries either accidental or suicidal ingestion. The ingestion can be unintentional unsafe use of products during occupational activities also. According to WHO data, in 2012 an estimated 1,93,460 people died worldwide from unintentional poisoning. Of these deaths, 84% occurred in low and middle-income countries [1]. Savlon (chlorhexidine 0.3%+cetrimide 3%) is a commonly used household antiseptic used and is generally thought to be safe. However, cetrimide is a quaternary ammonium disinfectant that can cause contact dermatitis and chemical burns. There have been several reports of adverse reactions to chlorhexidine gluconate, including contact dermatitis, contact urticaria, anaphylactic shock, and keratopathy [2-5].

There is very less data on intentional ingestion of liquid savlon. Symptoms of savlon upon ingestion are usually mild and this chemical is considered relatively safe. But its effect in pregnant patient was not found in any case study or case series in the literature. We report a case of 32 years pregnant patient presented with savlon poisoning and it went fatal in ICU after 16 days secondary to probable alcohol induced delirium.

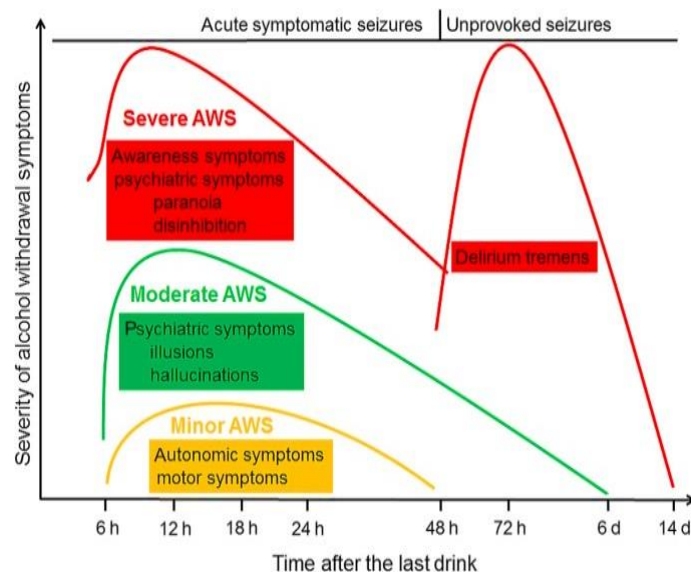


Figure 1: Alcohol withdrawn syndrome.

Case Study

A 32 years old female with 35 weeks pregnancy, G2P1 A 0, chronic alcoholic for the past 2 years (around 30 ml-60 ml/day according to relatives) presented to emergency services three hours after alleged history of savlon poisoning (150 ml) with complaints of moderate to severe pain in abdomen, periumbilical, non-radiating and associated with multiple episodes of vomiting, dyspnoea and altered sensorium. There was no history of hematemesis or seizures. The patient had unintentionally ingested savlon at night time and vomited after 20 minutes of ingestion. The patient becomes restless and

vomited four times in 20 minutes. After that the relatives brought her to emergency department of the hospital.

Past history of weakness and tingling in lower limbs and 4-5 episodes of unconsciousness in last one year was present. Pregnancy was 35 weeks, history of hyperemesis gravidarum in first trimester but uneventful later on.

Personal history suggested that the patient had history of alcohol ingestion 30 ml/day-60 ml/day for last 2 years and no other significant history. Last alcohol ingestion was 19 days back.

When the patient was received in emergency, she had moderate to severe pain in abdomen dyspnoea at rest that used to decrease when lateral position was made. The patient had drowsiness and altered sensorium with no orientation to time place and person. Her pulse rate was 144/minute, blood pressure: 140/84 mmHg, Afebrile and respiratory rate: 29/minute and SPO₂: 93%. Immediately, blood samples for haemogram, electrolytes, arterial blood gases, renal function tests and blood grouping was sent. A wedge of appropriate size was inserted under right side of buttocks. The patient was given oxygen through non-rebreathing mask at 10 litres per minute. But the saturation of oxygen did not improve and it became 85%. The patient immediately had witnessed cardiac arrest and CPR was started as per ACLS protocol. Immediately endotracheal intubation was done and chest compressions just above sternum were started. Injection adrenaline 1 mg IV was pushed and patient revived immediately within 70 seconds. The call for the anesthesiologist was received and patient was examined. The patient was afebrile, on AMBU ventilation with a pulse rate of 132/minute, BP of 140/89 mmHg and on Inj. Adrenaline 0.1 mcg/kg/minute dose. The patient was immediately shifted to ICU at the earliest and put on mechanical ventilation IPPV mode, TV 500 ml, I:E=1:2, RR:12/min. Rest supportive treatment in form of antibiotics and antacids were given. The gastric lavage was done after putting the gastric tube and activated charcoal was given to the patient.



Figure 2: AMBU ventilation.

On day 2 of ICU, patient was afebrile 38°C, with pulse rate of 120/min, BP 84/54 on Inj. Noradrenaline was increased. Physical examination revealed bilateral crepts in bases, CNS had E2M2Vt with pupils fully dilated, sluggishly reactive. Bilateral plantar reflex was decreased. The fetal heart rate was 158 per minute and was monitored continuously. The patient's relatives were counselled regarding both mother and foetus condition and it was decided to do caesarean section keeping all the preparation ready once patient is stabilized. The investigations were Hb: 6.4

gm%, S. Na: 122 meq/dl, S.K: 3 meq/dl. Blood Urea: 42 gm/dl, S. Creatinine: 1.2 g/dl, ABG revealed hypoxaemia with metabolic acidosis (pH-7.12) and ECG showed T wave inversion from V₁-V₆. The corrective measures and supportive treatment was continued with mechanical ventilation. A Ryle's tube was inserted through right nasal cavity and test feed was administered. The patients' parameters and fetal parameters were monitored continuously.

Sodium bicarbonate correction for metabolic acidosis was given and 2 units of packed RBC transfused in view of anaemia. Inotropic support was then gradually tapered and weaning from mechanical ventilation was done.

Next day the patient had normal ABG; inotropic support was titrated and was stopped after 32 hours. Supportive treatment was continued. Foetal parameters were normal. Patient was successfully extubated after 72 hours after meeting weaning criteria.

After 12 hours post extubation, the patient again developed irrelevant talks, mild frothing from mouth, dyspnoea and then turned disoriented. The foetal parameters were normal and were regularly monitored. Diagnosis of G2P1A0 with alcohol withdrawal was made and Tab chlordiazepoxide 2.5 mg BD and Tab metoprolol 12.5 mg OD were started in view of alcoholic withdrawal. Oxygen inhalation was continued. Injection Vitamin K 10 mg OD was administered intramuscularly. The patient's trachea was reintubated and again required inotropic support. The patient also had metabolic acidosis and developed pneumonitis followed by adult respiratory distress syndrome and dyselectrolytemia followed by acute renal failure in the next 2 days. The caesarean section was planned but fetal heart rate had become zero and the could not be heard through stethoscope/on cardiotocography. The patient was left for spontaneous delivery. The plan of caesarean was abandoned and the supportive treatment was continued. On 6th day the patient delivered in ICU and the baby was not alive. The endoscopy was also done by the gastroenterologist and ulceration due to gastritis was diagnosed. The supportive therapy was continued for the next 11 days.

On day 15, patient developed anuria with blood urea: 119 mg/dl and S. Creatinine: 3.8 mg/dl, TSB: 3.4 mg/dl, SGOT: 350 IU/l, SGPT: 80 IU/l, ABG showed hypoxia with metabolic acidosis.

On day 16, patient again had cardiac arrest and despite all efforts, patient could not be revived.

Results and Discussion

From the available literature, symptoms of savlon poisoning are generally mild ranging from nausea, vomiting to ARDS when aspirated. Pregnancy with savlon poisoning with alcohol withdrawal is rare combination. The physiological changes of pregnancy and the harmful effects of savlon resulted in the complications. The alcohol addiction itself causes enzyme induction in liver, renal or hepatic diseases. The withdrawal of alcohol with pregnancy with savlon poisoning caused other complications.

Delirium Tremens (DT) is a toxic state that occurs following sudden abstinence from chronic alcoholic use. Occurrence of symptoms after stopping of alcohol is diagnostic criteria for DT. It is possible to be precipitated by external factors like infections, injury, etc. Symptoms usually begin a few hours after cessation of alcohol intake and peak at 1 day to 3 days, but they may last up to 1 week-2 weeks. Classical clinical picture includes tremor, seizures, hallucinations, agitation and autonomic hyperactivity.

In our case, we observed our patient being chronic alcoholic developed hallucinations and agitation on day 4 and meeting the Diagnostic and Statistical Manual of mental disorders (DSM-5) diagnostic criteria and the possible diagnosis of alcoholic withdrawal syndrome was made and managed as per protocol.

Subsequently on day 15, patient developed acute liver failure explained by presence of hypoproteinemia and concurrent kidney injury which was progressive and developed probably hepatorenal syndrome. It's proven that, liver disease as a co-morbidity is very common in patients with DT and that could complicate the clinical presentation, determine the treatment choice, and influence the outcome. This also may be related to the liver necrosis with savlon poisoning.

Though there is no known history of liver disease in our patient, liver disease could not be ruled out owing to coexisting illness like DT and pregnancy might have contributed in gestational hepatic diseases. Hepato renal Syndrome is a reversible functional renal impairment that occurs in patients with advanced liver cirrhosis or those with fulminant hepatic failure due to any etiology probably sepsis induced in our case [6,7]. Hemodialysis could not be planned early due to pregnancy, persistent hypotension and metabolic acidosis. The supine hypotension syndrome was anticipated but due to placement of wedge it was not affected. When the caesarean section was planned the patient was not stable and thus normal delivery was planned. The stabilization of patient was done with supported therapy.

On day 16, patient developed cardiovascular collapse and could not be revived despite efforts. This can attribute secondary to sepsis and multiorgan failure along with delirium tremens per se and pregnancy as a contributing factor. The pregnancy itself has own physiological changes in respiratory, cardiovascular, renal, hepatic, and other systems. Over and above it was alcohol withdrawal delirium tremens. The accidental savlon poisoning contributed a lot and it might have caused such deterioration of refractory metabolic acidosis, aspiration and hypoxia.

Cetrimide is a common constituent of many sterilizing and detergent fluids used in hospitals and the community for skin antisepsis, shampooing hair and cleaning instruments. When ingested, cetrimide and other quaternary ammonium compounds cause nausea and vomiting and strong solutions may cause oesophageal damage and necrosis [8]. Chlorhexidine gluconate is widely used for disinfection of skin, mucous membrane and medical instruments [6].

Ingestion of 150 ml of a 20% solution in a suicidal attempt resulted in pharyngeal oedema, oesophageal necrosis, hepatitis and liver necrosis [9,10]. Liver enzyme levels raise usually but this comes to the normal range within 6 months as per literature review. This patient expired on 16th day but the features were similar to what was observed in the literature.

Conclusion

Savlon liquid usually results in relatively mild symptoms. But here it caused severe reactions and it might have been aggravated due to pregnancy and delirium tremens. The pulmonary oedema has also been reported earlier and ARDS is seen earlier also in few patients. This may be due to could be partly due to aspiration of savlon or due to gastrointestinal system changes in pregnancy such as higher gastric volumes and delayed emptying. The importance of protecting the airways before gastric emptying and lavage is of obvious importance. The initial cardiac arrest might be due to the savlon ingestion and hypoxia due to aspiration. Unfortunately the patient was lost in present scenario but many lessons were learnt. The savlon poisoning can be severe one and is a rare poison to be ingested intentionally. The pregnant patient with savlon poisoning had increased its severity. This was further aggravated with delirium tremens due to alcoholic withdrawal.

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