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Lacto-Calamine Poisoning in a Child-Case Report

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ABSTRACT

Lacto-calamine lotion is most commonly used as a household skin moisturizer. Accidental ingestion has been very rarely reported in the literature. If ingested, the patient usually develop minor symptoms such as vomiting and gastrointestinal disturbances. We aim to report a case of Lactocalamine poisoning which lead to neurological disturbances in the form of seizures and irritability along with constitutional symptoms such as gastrointestinal disturbances and vomiting. The child was managed conservatively and kept under observation for 72 hours, after which the child was discharged with follow-up advice.

Keywords: Lacto-calamine; Skin moisturizer; Poison; Child

INTRODUCTION

Lacto-calamine lotion which is popularly used as a skin moisturizer has the following constituents which are beneficial to the skin: it has Kaolin- which absorbs excess oil without removing essential nutrients from the skin; Zinc oxide- which helps in unclogging the pores with its anti-bacterial properties; Aloe vera-retains natural moisture preventing excessive drying of the skin. Minor constituents would include Propylene glycol, glycerin, castor oil, Glyceryl stearate, polysorbate 80, centarnyl alcohol, simethicone, Hamamelis virginiana. Most of the constituents are not known to cause any harmful effects when there is accidental ingestion in the pediatric age group or adults. We hereby report an intriguing case of Lacto-calamine poisoning in a child following which there were neurological disturbances associated with gastro-intestinal discomfort was admitted to our hospital, managed conservatively then discharged with a follow-up advice. There are no known case reports or studies on Lacto-calamine poisoning till now, hence we hereby report this case as one of the rarest poisoning cases.

CASE REPORT

14-year-old female child of first birth order born out of non-consanguineous marriage with premorbid normal perinatal, developmental history and history of complete immunization presented to Pediatric emergency with complaints of abnormal body movements 2 episodes with spontaneous resolution in the form of abnormal tightening

of bilateral upper limbs and lower limbs, up-rolling of eye-balls, associated with frothing from the mouth and urinary incontinence of two minutes duration within an interval of 30 mins following ingestion of Lactocalamine lotion- approximately 50ml (child presented to an emergency on the day of admission around 08:36 PM- approximately 14 hours after ingestion). Child had abdominal pain, which was diffuse in nature without any radiation and exacerbating or relieving factors, moderate to severe in intensity along with 2 episodes of vomiting, non-projectile in nature, non-bilious in consistency, containing water and food particles without any blood. There was no history of any blurring of vision, giddiness, and loss of smell sensation. There was no history of any difficulty in passing stools, decreased urine output, sweating, chest pain, palpitations and altered sensorium. Treatment history: Child was taken to a local nearby hospital where she was initially managed by gastric lavage and supportive management and stabilization, following which she was referred to the All-India Institute of Medical Sciences, Rishikesh.

On examination, the child was conscious, alert and active. Pallor was present without any signs of cyanosis, icterus, clubbing and lymphadenopathy. Oral cavity examination revealed a 3x1x1 tongue bite wound with bleeding points all over the buccal mucosa. There were no other bleeding sites over the body. Vitals: Temperature:98.3 F; Pulse rate-86/min; Respiratory rate:22/min; Saturation:96% on Room air; Blood pressure: 100/72mmHg.Systemic examination revealed no significant abnormalities as per respiratory, cardiovascular and gastro-intestinal system-wise. On neurological examination she was conscious, oriented to time, place and person; GCS:15/15; Pupils-Normal in size and shape with reaction to light; Sensory system-intact; Cranial nerve examination-Grossly normal; Motor system: Bulk- appropriate to age; Tone-Normal tone in all four limbs; Power: 5/5 in all the muscles; Reflexes: Superficial-intact and Deep tendon reflexes – Knee – normal, Ankle-normal and Plantar reflex being normal.

Laboratory investigations: Routine investigations were done (Hemoglobin-10.4g/dl, total counts-9040/Differential Counts-Neutrophils-64%, lymphocytes-26%, monocytes-9.1%; Platelets-1,19,000). Renal function tests were unremarkable. Liver function test suggestive of raised total bilirubin and direct bilirubin (3.5 and 0.4mg/dl respectively). Prothrombin time (PT)/International normalized ratio (INR)-14.8/1.1. Urine for toxicology screen was sent which came out to be unremarkable. An ophthalmological examination was done which came out to be normal without any abnormal features. The child was initially managed with anti-epileptics (Levetiracetam) and monitored in the pediatric intensive care unit. Supportive management (fluids, pantop, paracetamol) was given. Gradually, the gastro-intestinal symptoms improved. The patient was monitored for 72 hours following which she had no further seizure episodes. Neuroimaging - CE-MRI brain with epilepsy protocol was planned but postponed due to the family's financial constraints. Family members were counselled on the importance of neuroimaging, and danger signs were explained to them. She was discharged with appropriate treatment advice and follow-up, in a hemodynamically stable state. During the follow-up period, neuroimaging and EEG studies were planned.

DISCUSSION

The lacto-calamine lotion, a product that we use on a daily basis can be a potential health risk, as observed from our case -causing significant neurological manifestations. There are no articles and case studies which would signify the

toxic effects of constituents of the lotion. But they can be toxic if consumed in higher doses and can lead to such manifestations as described above. The exact constituent which leads to these manifestations is not known in our case and needs to be evaluated further or more number of case reports need to be brought to notice which enlightens the possible harmful effects of day-to-day cosmetic products. Neurological manifestations in our case were managed with first-line anti-epileptic medication and were monitored during the hospital stay. The outcome of these patient depends upon the immediate action, and on achieving medical help as soon as possible. There are no antidote discovered till date-for this kind of poisoning. Parents were counselled regarding the danger signs and were advised to follow up for assessment of clinical improvement.

According to the brand label, the ingredients of lactocalamine are- Aqua, Propylene Glycol, Kaolin, Glycerin, Aloe vera gel, castor oil, PEG-100, Zinc oxide, Zinc carbonate, Glyceryl stearate, polysorbate 80, Xanthan Gum, Cetearyl alcohol, simethicone.

Out of these, only propylene glycol has been reported to cause significant side-effects. It is widely used as a solvent in the manufacture of oral and injectable drugs, cosmetics, lotions, and ointments. It's mostly regarded as a stable, pharmacologically inert substance with low systemic toxicity.[1] Minimal-to-mild transient central nervous system depression, metabolic acidosis, and elevation in serum lactate levels have been observed, suggesting a relatively low order of toxicity as compared to other alcohols and glycols. Laboratory assessment has shown it to cause high anion gap metabolic acidosis with increased serum osmolality but with a normal osmolal gap.[2] The metabolic acidosis component was attributed to the increased concentrations of lactate and pyruvate in the blood.

There have been few case reports about the possible relationship between ingestion of propylene glycol and CNS symptoms in some patients. Karunyan et al described a case of seizures associated with long term ingestion of Vitamin D with propylene glycol as its co-solvent. The child was on treatment for about 13 months, thereafter he developed multiple episodes of seizures. EEG done showed high amplitude, sharp wave activity which indicated increased cerebral irritability. The symptoms gradually improved and the child was seizure free after discontinuation of medication. [1] Another case of a 61-year-old man has been reported after acute ingestion of ethanol and antifreeze solution containing propylene glycol, which showed similar acid-base disturbances as described above. No neurological manifestations were reported in this case.[3]

CONCLUSION

Lacto-calamine poisoning can be harmful and lead to neurological manifestations if ingested. Early diagnosis with prompt treatment and possible decontamination has to be done to prevent further clinical deterioration. All suspected and confirmed cases need to be under observation for a certain period for any new onset symptoms or signs. Parental assurance needs to be given and appropriate counselling with supportive rehabilitation to the concerned, should be ensured.

REFERENCES

1. Arulanantham K, Genel M. Central nervous system toxicity associated with ingestion of propylene glycol. J Pediatr. 1978;1;93(3):515-516.

2. Glover ML, Reed MD. Propylene glycol: the safe diluent that continues to cause harm. Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy. 1996;8;16(4):690-693.
3. Brooks DE, Wallace KL. Acute propylene glycol ingestion. Journal of Toxicology: Clinical Toxicology. 2002;1;40(4):513-516.