

Lindane toxicity following accidental oral ingestion

Sir,

Lindane (gamma benzene hexachloride), 1% a pesticide is one of the commonly used topical drugs for scabies in our country. Due to miscommunication, the lindane lotion prescribed for local application was administered by oral route resulting in life threatening events in two cases which are reported here.

Case 1, a three-year-old boy was brought to the emergency with a history of generalized seizures in his sleep with loss of sensorium for 10-15 minutes. On admission, the child's vital signs were stable, he was drowsy but arousable and GCS (Glasgow coma score) was 10/15. Pupils were normal and reacting to light. Superficial and deep tendon reflexes were normal. All the routine investigations including complete blood count, random blood sugar, serum electrolytes, serum calcium and urine routine examination were normal. On cutaneous examination, the child was found to have papular skin lesions and on questioning, the mother admitted to consulting a local practitioner for pruritic skin lesions for which the child was prescribed both oral and topical medications. Detailed history revealed that mother had inadvertently administered 10ml of lindane lotion orally to the child after 1 hour of which the child convulsed. The child recovered within 24 hours with supportive measures alone and was discharged in a stable condition.

Case 2, a 6-yr-old girl reported to the outpatient department with a history of a single episode of generalized seizures lasting for 5-10 minutes. The child had received treatment for scabies from a local practitioner following which she developed the seizures. On examination, the child had a GCS of 15 with stable vital signs. On enquiry it was found that the mother had given the child lindane lotion orally. The child was observed for 24 hours and discharged in stable condition.

Gamma benzene hexachloride (lindane) chemically is the gamma isomer of hexachlorocyclohexane. It is an insecticide which is a component of pest control products. It is commonly used for the treatment of scabies in our country. Percutaneous absorption is known with lindane; hence, it is to be used with caution in children below 2 years and in premature

babies. The dermal absorption rate of lindane is 9.3%, which is more efficient in patients with abraded skin. If ingested orally, it gets concentrated in the white matter of the brain and affects the brain ammonia metabolism. Vomiting is seen immediately post ingestion followed by signs of central nervous system stimulation including convulsions and hyperexcitability. Seizures begin within 1-2 hours and may last up to a few days.^[1-4] Other reported side effects include skin irritation, dizziness, and muscular cramps. It has also been associated rarely with hematological diseases like aplastic anemia and megaloblastic anemia. Hyperglycemia, hyperpyrexia, pulmonary edema and death also have been reported. Post mortem changes include degeneration of hepatic and renal tubules. Accidental ingestion can sometimes be fatal.^[5] Treatment of patients with accidental ingestion includes observation, control of seizures, skin decontamination and gastric lavage if they reach the hospital early. Convulsions may be treated with diazepam or phenobarbitone.

In our cases, due to miscommunication, lindane was taken orally resulting in life threatening events. Yousaf Daud *et al.* have reported a case of scabies with lindane toxicity in 2010.^[6] Due to packaging in bottles similar to other syrups, it is often mistaken for liquid oral medications, mainly cough syrups.^[7] Prescribing lindane along with oral antipruritic agents in syrup form without explaining to the parents may be a cause of confusion.^[8]

To overcome this, we suggest that the following precautions be taken when prescribing lindane for scabies.

- Doctors should spend time to explain the prescription/dosage details
- Attendant/nurse should demonstrate application of lindane to the patient
- Lindane lotion must not be packaged in a bottle, instead it should be made available in tubes like other topical preparations.

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REFERENCES

1. Tenenbein M. Seizures after lindane therapy. *J Am Geriatr Soc* 1991;39:394-5.
2. Solomon LM, Fahrner L, West DP. Gamma benzene hexachloride toxicity: A review. *Arch Dermatol* 1977;113:353-7.
3. Singal A, Thami GP. Lindane neurotoxicity in childhood. *Am J Ther* 2006;13:277-80.
4. Kramer MS, Hutchinson TA, Rudnick SA, Leventhal JM, Feinstein AR. Operational criteria for adverse drug reactions in evaluating suspected toxicity of a popular scabicide. *Clin Pharmacol Ther* 1980;27:149-55.
5. Sudakin DL. Fatality after a single dermal application of lindane lotion. *Arch Environ Occup Health* 2007;62:201-3.
6. Daud Y, Daud-ur-Rehman, Farooq U. Lindane toxicity in a 7 year old boy. *J Ayub Med Coll Abbottabad* 2010;22:223.
7. Centers for Disease Control and Prevention. Unintentional topical lindane ingestions--United States, 1998-2003. *MMWR Morb Mortal Wkly Rep* 2005;54:533-5.
8. Aks SE, Krantz A, Hryhczuk DO, Wagner S, Mock J. Acute accidental lindane ingestion in toddlers. *Ann Emerg Med* 1995;26:647-51.

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