

A rare case of Cardiac and Neurotoxicity in Acute Lindane poisoning

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ABSTRACT : 50 year old housewife presented with altered sensorium & seizure after accidental poisoning with Lindane,(which resembles antacid). Latter she developed NSTEMI, LV dysfunction, confirmed by ECG & Echo changes. With conservative management she had total recovery of neurological & cardiac functions.

KEYWORDS -Lindane, NSTEMI, LV dysfunction.

I. INTRODUCTION.

Lindane is an insecticide containing gamma hexachlorocyclohexane. When ingested lindane may produce incoordination of movement, convulsions, liver necrosis, renal failure, aplastic anemia, cardiac abnormalities and death. This report describes the clinical and laboratory findings in a lady who accidentally ingested lindane and experienced convulsions, ECG and ECHO changes that have not been previously described in small dose of accidental Lindane poisoning.

II. CASE PRESENTATION.

A 50 year old housewife presented with h/o with repeated bouts of vomiting, aggressive behavior & 3 episodes of short lasting generalized tonic clonic seizures, following accidental consumption of 20ml of 20% gamma benzene hexachloride (LINDANE). Previously she was physically & mentally sound & there was no past history of deliberate self harm or any addictive habits. The accidental consumption is said to be due to mistaken identity due to resemblance of the content, color & bottle of Lindane to that of a popular OTC “Gas medicine”/Antacid.

After a post ictal confusion status for initial 4 hrs of hospitalization, she regained normal consciousness, orientation & motor power. All the other systems were within normal limits. On the 2nd day she had subconjunctival haemorrhage (Fig1), with normal thrombocyte count & it resolved latter.



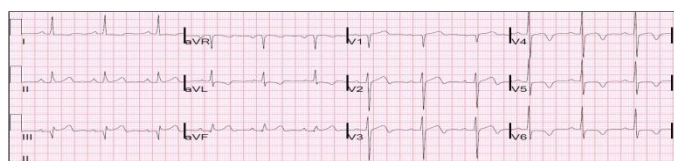
(Fig1)

On the 3rd day she developed orthopnea, hypotension, bibasal crepitations, soft S1 & S3 with 85% of SPO2 suggestive of left heart failure.

III. INVESTIGATIONS

Her base line investigations at admission: - Hb- 9.7mg/dl, TLC- 9,000/mm³, Platelets- 1.2lakh/mm³, RBS- 101mg/dl; BU- 32mg/dl, Se. Creatinine- 0.7mg/dl; S Na⁺- 131meq/l, S. K⁺ -4.9meq/l, Ca⁺⁺9.0mg/dl; MP Smear- negative; CXR, ECG, CT Brain were normal.

On 3rd day after developing clinical features of LVF, her repeated ECG(Fig:2) revealed fresh T wave inversion in leads I, aVL, V4-6, CPK MB was 495 u/L; ECHO revealed Global hypokinesia, mild MR & EF of 32%.



(Fig: 2)

Repeated RFT & Electrolytes were normal.

IV. TREATMENT

On 1st day, she was treated with gastric lavage, hemodynamic monitoring, oral activated charcoal, IV Phenytoin sodium & other supportive measures continued on 2nd day.

3rd day onwards, after she developed features of LVF, She was further managed in lines of NSTEMI with IV Heparin, Aspirin, Atorvastatin, Dobutamine infusion and other supportive measures were continued till her total recovery.

V. OUTCOME AND FOLLOW-UP

Over next 7-10 days she became symptomatically better & her LV function improved. She was discharged at 2weeks with no further seizure, no residual neurologic deficits or cardiac symptoms. Her ECG changes & LV function were normalized at discharge & remained normal at 3months follow-up.

VI. DISCUSSION

Lindane is also known as Gamma Hexa Chlorocyclohexane, Benzene Hexachloride or Gammahexane. It is an organochlorine chemical used widely as an insecticide, agricultural disinfectant and for pharmacological treatment of head lice and scabies [1]. The package resembles that of an antacid liquid(Fig3). WHO classifies Lindane as moderately hazardous [2].

Lindane toxicity may occur due to chronic occupational exposure as in farmers spraying it in fields or acutely due to intentional or accidental ingestion. It is absorbed through respiratory, digestive and transcutaneous pathway and accumulates in lipid rich tissues. It is mainly a neurotoxin due to its interfere with the GABA system by interacting with GABA-A receptor chloride channel complex at the picrotoxin binding site[3] & inhibition of chloride current activated by GABA[4]. Neurotoxic manifestations are prickling sensation, hyperexcitability, headache, dizziness, nausea, vomiting, incoordination, tremor, mental confusion. In severe cases it may cause convulsions, coma and respiratory depression.

Lindane accumulates in appreciable amounts in the heart and causes oxidative stress by modifying activity of scavenger enzymes. It releases Ca⁺⁺ from inositol phosphate sensitive intracellular stores in myometrial cells [3]. It also stimulates ryanodine sensitive Ca⁺⁺ channels [4].

Zev M et al [5] reported a case of lindane poisoning who developed grand mal seizures, severe acidemia, muscle weakness.

Sauviat et al [3] reported negative and dysphasic variation of T waves after lindane absorption due to high serum potassium levels

VII. CONCLUSION & TAKE HOME MESSAGE

Lindane / BHC is a commonly used insecticide.

Lindane is primarily a neurotoxic & rarely can produce cardiotoxicity

Accidental Lindane poisoning can occur due to the resemblance of the Lindane bottle & content to that of commonly used "Gas medicine"- Antacid.

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