

A rare survival after 2,4-D (ethyl ester) poisoning: Role of forced alkaline diuresis

Sir,

We report a rare case of 2,4-D (ethyl ester) poisoning that survived after treatment. This is probably the second case reported from India, who has survived after intentional poisoning with ethyl ester form of 2,4-D, marketed as a weed killer.

A 19-year-old male patient was brought to the emergency department with alleged history of ingestion of a liquid poison. Upon telephonic enquiry, the container had a brand name of Hit 44. Hit-44 is a weedicide with 2,4-D (ethyl ester) being the active ingredient.

The patient had dissolved 3 teaspoons of Hit-44 in a glass of water and consumed it at around 3:00 pm. The patient had a history of repeated vomiting of gastric contents after its consumption. He also had had a single generalized tonic-clonic seizure (GTCS) after which he became drowsy. Patient was taken to a local hospital where gastric lavage was done around 5:00 pm. He was then referred and received by us around 8:00 pm.

At the time of presentation, patient was drowsy with a Glasgow coma scale (GCS) of 10. When aroused from sleep, he complained of severe pain in the abdomen. His blood pressure was 110/70 mm Hg and pulse rate was 110/min. Respiratory rate was 20/min, and pupils were mid dilated and reactive. The chest was clear with vesicular breath sounds bilaterally. The electrocardiogram showed sinus tachycardia only.

His hemoglobin was 11 g/dl, total leukocyte count was 12,000/ μ l, and platelet count was 2 lakh/ μ l. His renal and liver functions were normal.

This poison does not have any specific antidote we searched the literature on this poison and found a role of forced alkaline diuresis in its management. So, the patient was put on intravenous fluids with added bicarbonate, injectable furosemide and oral potassium to cause forced diuresis. The forced diuresis was started at around 10:00 pm. His electrolytes including potassium were confirmed to be normal before beginning forced diuresis.

The sensorium improved with treatment, and he maintained good urine output. Tachycardia resolved after 6 h. Next day, the vitals were all stable with a GCS of 15 and he was shifted to the wards from Intensive Care Units. The patient was discharged on 5th day with normal liver and renal functions.

The poison is highly fatal with the mortality reaching almost 100% in the reports from the rest of the world.^[1,2] Five of the six cases reported from India till date have had a fatal outcome within the hospital. The lone survivor was a 31-year-old lady who had a prolonged hospital course before recovery.^[3,4] Poisoning with this agent is reported from North India only, and all six cases presented at PGIMER Chandigarh.

This poison has severe pulmonary, renal, neurological, gastrointestinal, and myotoxic effects leading to

multiorgan dysfunction and rapid death.^[4] Our patient had neurological manifestations in the form of GTCS and gastrointestinal effects like vomiting and abdominal pain at presentation. There were no pulmonary, renal, or myotoxic effects in our patient. Probably, the repeated vomiting after ingestion reduced the absorbed dose of poison and the forced alkaline diuresis that we started after admission also helped in rapid recovery of our patient. Accurate identification of the poison from the empty packs, timely gastric lavage and forced alkaline diuresis are thus recommended in future cases of poisoning with this agent.

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References

1. Keller T, Skopp G, Wu M, Aderjan R. Fatal overdose of 2,4-dichlorophenoxyacetic acid (2,4-D). *Forensic Sci Int* 1994;65:13-8.
2. Jorens PG, Heytens L, De Paep R, Bossaert L, Selala MI, Schepens PJ. A 2,4-dichlorophenoxyacetic acid induced fatality. *Eur J Emerg Med* 1995;2:52-5.
3. Singh S, Yadav S, Sharma N, Malhotra P, Bamberg P. Fatal 2,4-D (ethyl ester) ingestion. *J Assoc Physicians India* 2003;51:609-10.
4. Bhalla A, Suri V, Sharma N, Mahi S, Singh S. 2,4-D (ethyl ester) poisoning: Experience at a tertiary care centre in northern India. *Emerg Med J* 2008;25:30-2.

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