

Introduction

Acute endosulfan poisoning is not uncommon. It is still widely used by farmers in Kedah as an insecticide to increase crop yield.

Case Report

Mr. P, a 28-year-old average-build man presented to the Emergency Department with aggressive behaviour. He was reported to have perceptual disturbances. Minutes after, he started vomiting and had a generalized tonic-clonic seizure. Attempts to abort the seizure with intravenous diazepam 10mg and midazolam 20mg, in total (given 4 minutes apart), were unsuccessful. Consequently, Mr. P was intubated for airway protection. Activated charcoal was given via the nasogastric tube.

In view of the possibilities of illicit substance use and acute overdosing of his antipsychotics, intravenous sodium valproate 2800mg (40mg/kg) bolus was administered, in favour of phenytoin. Mr. P's refractory convulsive status epilepticus was only aborted after intravenous administrations of propofol (bolus 175mg, 2.5mg/kg; maintenance 5mg/kg/hour), phenobarbitone (bolus 700mg, 10mg/kg); maintenance 5mg/kg/day), rocuronium (maintenance 300mcg/kg/hour), and midazolam (maintenance 2mg/kg/hour).

The cause of the seizure was finally revealed when the patient's father brought in a bottle of insecticide, labelled "*Super Tengkorak (Super Skull)*" with active content of endosulfan 33%. Mr. P had ingested half a bottle of the insecticide during his psychotic ordeal, 30 minutes prior to his hospital arrival.



Figures showing a bottle of the ingested insecticide with its label, stating endosulfan as its active ingredient.

However, cholestyramine was not given due to its unavailability in our settings. His initial chest x-ray and brain computed tomography (CT) revealed chemical pneumonitis with features of hypoxic ischemic encephalopathy, respectively. Subsequent serial blood works demonstrated elevated liver enzymes, deteriorating renal function with worsening metabolic acidosis, leukocytosis, coagulopathy and raised creatinine kinase.

Unfortunately, Mr. P succumbed to his death after 3 days in the Intensive Care Unit.

Discussion/Conclusion

Endosulfan is a lipophilic organochlorine neurotoxin, which causes repetitive neuronal discharges, resulting in refractory status epilepticus. The use of cholestyramine, if available, may raise both its convulsive dose and lethal dose. Cholestyramine is a nonabsorbable, bile acid-binding anion exchange resin, that binds endosulfan to reduce its enterohepatic and enteroenteric recirculation. Rapid termination of seizures may improve patient's outcome. Undeniably, history taking in a case of acute poisoning is challenging, but this shall not hinder the immediate measure to terminate the life-threatening sequelae. On top of strict treatment protocols, clinical vigilance with timely management, are vital to improve patient's outcome.



CT of the brain with evidence of cerebral oedema and poor grey-white differentiation, in keeping with hypoxic ischemic encephalopathy

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3. Mr P's family members who had consented to the case being presented in the EMAS Meeting 2021.

Declaration of Conflict

We have no pecuniary or other personal interest, direct or indirect, in any matter that raises or may raise a conflict with the submitted abstract/poster and its content.

References

1. Holland, M. G. (2011). Insecticides: Organic chlorines, pyrethrins/pyrethroids, and insect repellents. Goldfrank's Toxicologic Emergencies, 9th edition. New York: McGraw-Hill, 1477-93.
2. Menezes, R. G., Qadir, T. F., Moin, A., Fatima, H., Hussain, S. A., Madadin, M., ... & Senthilkumaran, S. (2017). Endosulfan poisoning: An overview. Journal of forensic and legal medicine, 51, 27-33.
3. Chandran, J., & Krishna, B. (2019). Initial management of poisoned patient. Indian journal of critical care medicine: peer-reviewed, official publication of Indian Society of Critical Care Medicine, 23(Suppl 4), S234.
4. Park, H. R., Song, P., Lee, J. J., & Cho, J. Y. (2018). Endosulfan-induced prolonged super-refractory status epilepticus. Journal of epilepsy research, 8(2), 93.