[ID-P#045] Fatal Ventricular Tachyarrhythmia from Chlorfenapyr Toxicity

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Background: Chlorfenapyr is a widely used pesticide classified as moderately hazardous to human health. Its toxicity involves multiple mechanisms, with variations reported in these mechanisms.

Case Report: A 26-year-old female was admitted to the hospital with altered consciousness, which began three days earlier. She had ingested an unknown amount of insecticide containing 20% Chlorfenapyr and 8% Indoxacarb SC. Initially treated in Cambodia, her initial laboratory results, brain CT, and EKG were normal. However, her condition worsened with altered consciousness and anuria on day 4, leading to her transfer to Bangkok, Thailand. On arrival, her vital signs were: BT 39.3°C, PR 99 bpm, RR 22/ min, SpO2 99%, and BP 113/77 mmHg. She was drowsy on presentation. On day 5, she developed hyperthermia, leucocytosis, transaminitis, acidosis and creatinine kinase elevation. She was admitted to the ICU for resuscitation and hemodialysis. Post- hemodialysis, she regained consciousness but remained confused. The following day, she suffered a ventricular tachycardia and cardiac arrest. After return of spontaneous circulation, she continued to experience hypotension and repeated episodes of ventricular tachycardia requiring multiple cardioversions and intravenous lidocaine. On day 7, she succumbed to arrhythmia. Chlorfenapyr disrupts mitochondrial oxidative phosphorylation, leading to altered consciousness, hyperthermia, and metabolic acidosis. This impairment in ATP production causes cellular death and increases mortality risk. As a halogenated pyrrole, it also heightens cardiac sensitivity to catecholamines, which can result in serious arrhythmias, such as the fatal ventricular tachycardia observed in this patient.

Conclusion: Symptoms of chlorfenapyr toxicity may be delayed. There is no established effective treatment, making close monitoring and supportive care crucial due to the mortality risk.