## [ID-P#155] Case Report: A Fatal Ingestion of an Arsenic-Based Herbicide With a Favorable Outcome Following Early Chelation Therapy

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**Case Description**: A 50-year-old man presented to the Emergency Department(ED) after intentionally ingesting 20 mL of MSMA 39.5%(approximately 8g of arsenic), confirmed by his history and the herbicide bottle. He arrived 1 hour post-ingestion with abdominal pain, multiple episodes of vomiting, and diarrhea. Initial blood gas analysis showed metabolic alkalosis with a lactate level of 5.5, progressing to severe lactic acidosis 3 hours later (pH 7.27,HCO3 15.6,lactate 8.4). Fluid resuscitation and chelation therapy were initiated with intramuscular

dimercaprol(3 mg/kg 6hourly) at 4.5 hours post- ingestion, and the patient was admitted to the intensive care unit. By day 2, metabolic acidosis had resolved, and the patient was asymptomatic and hemodynamically stable. On day 3, chelation therapy was switched to oral Succimer. A 24-hour urine arsenic test on day 5 showed 9020 µg/L. The patient was discharged on day 7 with oral Succimer and outpatient follow-up.

During follow-up, a repeat 24-hour urine arsenic test on day 20 showed 662 µg/L, guiding further chelation therapy. Oral Succimer was continued for 28 days. A final 24-hour urine arsenic test 1 month after stopping Succimer showed a normalized level of 28 µg/L.

**Discussion**: Arsenic-based herbicides can cause severe toxicity, including lactic acidosis and organ failure. This case underscores the critical role of early chelation therapy in managing such poisoning. The timely administration of dimercaprol was essential for a favourable outcome. However, its limited availability in Malaysian hospitals can delay treatment and exacerbate patient outcomes. Improved access to essential chelating agents is crucial across Malaysia to better manage similar cases. Additionally, this case highlights the need for established protocols for the emergency treatment of acute arsenic poisoning and the mobilization of chelating agents to centres lacking stock.

**Conclusion**: Prompt initiation of chelation therapy following arsenic poisoning is vital for a favourable outcome, emphasizing the need for timely treatment and better availability of chelating agents.