

THE UNSEEN PERIL: UNRAVELLING A CASE OF LITHIUM TOXICITY IN THE EMERGENCY DEPARTMENT

No 61

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Introduction:

Lithium is a potent antimanic agent and a widely used mood stabilizer for bipolar disorder. However, its narrow therapeutic index increases the risk of toxicity, which can have serious effects on multiple organ systems. Severe lithium neurotoxicity is a critical condition resulting from excessive lithium buildup in the brain. Here we present a case of lithium toxicity at Hospital Tuaran.

Case Report:

A 61-year-old woman with bipolar disorder, maintained on lithium and quetiapine, presented to the emergency department with a several-day history of lethargy, muscle twitching, and reduced oral intake. Two weeks prior, her lithium dosage had been increased from 300 mg twice daily to 450 mg twice daily due to persistent symptoms and bipolar relapse. On presentation, the patient had stable vital signs, but a neurological examination revealed disorientation and mild cognitive impairment. A CT brain scan was unremarkable. However, after a few days, she suddenly became unresponsive, requiring intubation and inotropic support. Blood tests indicated severe lithium toxicity with a serum level of 2.7 mmol/L, along with elevated septic markers, acute kidney injury, and hypernatremia. She was started on intravenous hydration and transferred to a tertiary hospital for urgent haemodialysis. Haemodialysis was instituted and Lithium was discontinued, and serum levels gradually declined. Due to poor GCS recovery, a tracheostomy was performed.

Discussion:

The nervous system is highly sensitive to lithium. Severe lithium neurotoxicity is a critical condition resulting from excessive lithium accumulation in the central nervous system associated with serum lithium levels ≥ 2.5 mmol/L. Lithium toxicity symptoms range from mild tremors, gastrointestinal issues, and lethargy to severe neurological effects like seizures, agitation, and altered mental status, as observed in this patient. Lithium is highly dialyzable. Timely haemodialysis was crucial in lowering lithium levels, improving the patient's condition, and prevent long-term complications such as SILENT (Syndrome of Irreversible Effectuated Neurotoxicity) syndrome.

Conclusion:

This case underscores the importance of closely monitoring lithium levels and early intervention in the emergency department. Early detection and management, including cessation of lithium, enhance lithium elimination by hydration and haemodialysis, and supportive care for airway protection are crucial for better outcomes.

Reference:

- 1.R. Haussmann¹, M. Bauer¹, S. von Bonin², P. Grof³ and U. Lewitzka¹, Treatment of lithium intoxication: facing the need for evidence. Treatment of lithium intoxication: facing the need for evidence. Int J Bipolar Disord (2015)
- 2.C. Fernandes Santos* and R. Gomes. Syndrome of Irreversible Lithium-Effectuated Neurotoxicity (SILENT): A Review. Eur Psychiatry. 2022 Sep