

Diagnosing renal failure due to diethylene glycol in children in a resource-constrained setting

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Abstract

Background

In 2008, several Nigerian children developed acute kidney injury (AKI) after ingesting teething syrup contaminated with diethylene glycol (DEG). Because there are limited diagnostic facilities in resource-constrained countries, this study investigated whether AKI associated with DEG could be identified by other means.

Methods

This was a multicenter study. Information was obtained from hospital records. Clinicopathological features of all children with AKI over a 6-month period were reviewed.

Results

Sixty (50.4%) of 119 children ingested “*My pikin*” teething syrup. Compared to children who had not ingested it, they were significantly ($p < 0.05$) younger (11.95 vs. 31 months), more were anuric (98.3 vs. 74.6%), hypertensive (84 vs. 52%), had severe metabolic acidosis (46.7 vs. 20.5%), and died (96.6 vs. 71.2%). They developed increasing metabolic acidosis and multiorgan dysfunction despite peritoneal dialysis. Late presentation, financial difficulties, inadequate facilities for toxicology, and hemodialysis complicated management.

Conclusions

Identifying AKI associated with DEG is difficult. Detailed drug history, increasing metabolic acidosis, and multiorgan deterioration despite peritoneal dialysis should arouse suspicion. Simple diagnostic tests need to be developed and facilities for hemodialysis of infants and financial support provided. Recurrences can be prevented by creating awareness, improving manufacturing practices, field-testing of drugs, and international monitoring of pharmaceuticals imported for manufacture.

Keywords

Diethylene glycol Acute kidney injury Children Nigeria Resource-constrained country My Pikin Teething syrup

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