Pediatric Oncall Journal

DOI: https://doi.org/10.7199/ped.oncall.2026.63

CASE REPORTS

WHAT LIES BENEATH - CHILD POISONING

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ABSTRACT

A 3-year-old child, diagnosed with chickenpox 24 hours before, was admitted to the emergency room due to drowsiness and generalized hypertonia that had evolved for hours. Upon observation, he was drowsy, feverish, with hypertonia of the upper limbs. Due to suspicion of encephalitis, he underwent analytical evaluation, investigation of toxic substances, cranioencephalic CT scan and lumbar puncture, which showed no alterations. The EEG documented scanty bilateral temporo-occipital epileptiform activity. Empiric therapy with acyclovir was started. A few hours after admission, toxiphilic habits were found in the cohabitants, namely cocaine in the form of crack, and the parent's usual therapy with aripiprazole and trazodone, so biological samples were collected. The patient was asymptomatic 72h later. Repeated EEG in the post-critical phase and cranioencephalic MRI that did not document alterations. Later, the presence of high doses of cocaine and metabolites of aripiprazole and trazodone was confirmed.

ARTICLE HISTORY

Received 30 January 2024

Accepted 26 February 2024

KEYWORDS

cocaine, antipsychotics, trazodone, poisoning, child

Case Report

A previously healthy 3-year old boy, the second of a phratry of three, was brought to the emergency department due to drowsiness and generalized hypertonia evolving in the last few hours. Chickenpox was diagnosed the previous day in the emergency department. Accute medical history was otherwise unremarkable, namely fever, toxic exposure or family members with similar symptoms. He had previously been admitted to the paediatric department, whe he was 2-years old, due to self-limited somnolence and ataxia lasting 48 hours, concomitantly with his 6-year-old sister.

Upon admission, he was feverish (auricular temperature 103ºF), somnolent (Glasgow Coma Scale of 11, responsive only to verbal commands and with inappropriate speech). He presented with generalized body stiffness, with cephalic rotation to the left. Cranial computerized tomography scan and lumbar puncture were normal, and blood analysis showed an increase in creatinine [Cr] (Cr 1,07 mg/dl, Glomerular Filtration Rate [GFR] 52 mL/min/1,73m^2). The toxicology report of the urine sample came back negative for opioids, cannabinoids and cocaine and the blood sample came back negative for benzodiazepines and tricyclic antidepressants.

Albeith the normal liquor results, encephalitis was assumed and the child was admitted and medicated with empiric acyclovir and intravenous fluid therapy.

He remained in anuria for the first 12 hours, but kidney function improved gradually and normalized in 72 hours (Cr 0,7 mg/dL GFR 80 mL/min/1,73m^2). Neurological alterations subsisted less than 24-hours and he was afebrile 48 hours later.

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During this period further investigation was performed: a Cranial Magnetic Resonance Imaging that showed no alterations; and an Electroencephalogram (EEG), carried out 24 hours after the beginning of the neurological symptoms, that showed bilateral temporo-occipital epileptiform activity, non suggestive of encephalitis. After clinical resolution, another EEG was performed, and it showed no alterations. The urinary ionogram was unaltered. Blood and cephalorachidian liquid microbiology exams came back negative. IgG titers for varicella zoster virus were similar in cephalorachidian liquid and serum, but IgM titers were elevated in serum, excluding intrathecal synthesis. Protein chain reaction for herpes simplex virus 1 and 2, cytomegalovirus, Epstein-Barr virus, varicella zoster virus and human herpesvirus 6 was negative. He completed five days of acyclovir, until encephalitis was excluded.

Around the first 12 hours after he had been admitted, the medical team discovered that the mother used crack cocaine and that she was treated with trazodone and aripiprazole for severe depression. Despite our negative toxicological results, we sent new blood and urine samples, collected at admission, to the National Institute of Forensic Medicine and Forensic Sciences (NIFMFS) for deeper analysis. Weeks later, when the results came back, they were positive for cocaine, aripiprazole, trazodone and m-Chlorophenylpiperazine (mCPP), a trazodone's metabolite.

Due to the inherent risk (cocaine and drugs were within the reach of children or purposely administered to the child), Hospital Support Center for Children and Adolescents at Risk was engaged in order to keep the child and his siblings safe, and the situation was reported to the police investigation department.

Discussion

This case report illustrates a rare case of concomitant intoxication with cocaine, trazodone and an antipsychotic, aripiprazole. There are few reports of

seizures and lethargy in cocaine intoxications in children under 10 years old, although cocaine is associated with excitatory behavior.[2] We believe that the clinical presentation resulted in different side-effects of the drugs: generalized stiffness and the posture of the neck and the head rotation was an extrapyramidal effect of the aripiprazol, whilst the drowsiness was most likely related to the cocaine poisoning[3,4,5] because trazodone in high concentrations loses its sleep-inducing capacity. The acute renal failure was probably caused by dehydration (prerenal etiology) along with direct damage to the kidney (renal etiology).

Drug exposure and accidental ingestion is common in paediatrics, and are a common cause of acute neurological symptoms. In fact, it was one of the primary causes addressed in the emergency department, and a toxic screening was ordered.[1] Although negative, a high index of suspicion remained, strengthened by the previous history of self-limited neurological symptoms, the rapid recovery in less than 24 hours, and by discovery of the maternal toxic habits. Blood and urine were send to NIFMFS, and the intoxication with multiple drugs was proved.

Compared to the forensic tests conducted in the NIFMFS, hospital test have a lower sensitivity, so if there is a high suspicion level, the tests should be done in a more specific laboratory to guarantee reliable results.

Another important aspect to take under consideration is that children accidental poisoning is usually underdiagnosed by parents/caregivers. Toxic aetiology should not the disregarded, and early collection of the appropriate samples is paramount. Family education to prevent reoccurrence is advised. If suspected negligence or intentional poisoning, rapid referral to social services and the police investigation department is mandatory.

Compliance with Ethical Standards
Funding : None
Conflict of Interest : None

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