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Case Report Open Access

Myoclonic Jerks due to Piperazine Toxicity

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Piperazine is a commonly used vermifuge in paediatric practice. We report a case of myoclonus due to Piperazine toxicity.

A six year old female child presented to our emergency with history of recurrent episodes of myoclonic jerks after approximately eight hours of taking excessive dose of Piperazine at 115 mg/kg/day. She was a developmentally normal child with no history of epilepsy. Renal and liver function tests were normal. MRI Brain and Electroencephalogram were normal. The myoclonic jerks occurred 4-5 times for 3 days and then decreased in frequency and disappeared after 7 days. On follow up, she did not have any further episodes.

Piperazine is a cyclic secondary amine and is readily absorbed , maximium plasma concentrations are reached within 2-4 hours [1]. Most of the drug is excreted unchanged in the urine in 2-6 hours and excretion is complete within 24 hours [2]. There is a large difference between effective therapeutic and overtly toxic doses.

Occasional gastrointestinal upset, urticarial rections and transient neurological effects have attended its use. Neurological side effects of piperazine include lethargy, irritability, confusion, hallucination, dropping of objects, vague ocular disturbances, tremors, clonic spasms, muscular weakness, incoordination, dysarthria, apraxia, seizures and coma [3]. All types of seizures like generalised tonic clonic, atonic, myoclonic and absence seizures have been reported [4,5]. Seizures may occur either de novo or with increased frequency in epileptic patients. Piperazine is contraindicated in patients with a history of epilepsy [1].

The exact mechanism of piperazine neurotoxicity is not known. The following hypotheses have been suggested: a) Post synaptic neuromuscular blockade, b) Possible biochemical causes include a lowering of the pH and ionic shifts across cell membranes. c) Hypersensitivity, predisposed to by the presence of parasites, by causing vasomotor changes or acute demyelination [6].

Neurotoxic effects occur in individuals with renal dysfunction or overdose and rarely after normal therapeutic dose. Hence the accuracy of the dosage should be emphasised and also parents should be warned about the possible neurological side effects.

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