

## Case Report:

# Generalised multifocal myoclonus following organophosphate poisoning: a case report

Dr. Nidhin Rabi, Dr. Suhan Alva, Dr. Karthik Koneru

Department of General Medicine, K. S. Hegde Medical Academy, Deralakatte, Mangalore – 575018

K. S. Hegde Medical Academy, Mangalore – 575018

Corresponding Author: Dr. Suhan Alva

### Abstract:

Organophosphates act by inhibition of the acetylcholinesterase enzyme to produce their clinical features.<sup>[3]</sup> Following acute organophosphate exposure, three well defined clinical syndromes are seen; the acute cholinergic crisis, the intermediate syndrome and organophosphate induced delayed polyneuropathy. Besides these, organophosphate induced neuropsychiatric manifestations have also been reported and these include drowsiness, confusion, lethargy, anxiety, emotional lability, depression, fatigue and irritability.<sup>[1]</sup> Here we present the case of a patient who presented with generalised myoclonic jerks following acute organophosphate ingestion. A 28 year old lady was referred to our hospital from a peripheral centre, 11 days prior to arrival at our hospital; she had consumed an organophosphate (suspected to be chlorpyrifos) with suicidal intent. She was admitted in a hospital near her house and received standard therapy with atropine and pralidoxime. She had intubated in view of respiratory failure and extubated within 48 hours on improvement. During her convalescence there, she began developing involuntary jerking movements of her limbs on day 10 after ingestion of the organophosphate. The following day she was referred to our institution. Cases with generalised myoclonus were not previously known to occur following organophosphate poisoning and should now be included among the numerous organophosphate related neurological manifestations.

**Keywords:** Organophosphate poisoning, acetylcholinesterase enzyme

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### Introduction

Organophosphate compounds are widely used in India and other developing nations as insecticides and are a cause for a significant burden of toxicity in humans following both acute and chronic exposure. In India, although exact numbers are not available, about half of the admissions following acute poisoning are thought to be due to these compounds.<sup>[1,2]</sup>

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### Case Report

A 28 year old lady was referred to our hospital from a peripheral centre, 11 days prior to arrival at our hospital; she had consumed an organophosphate (suspected to be chlorpyrifos) with suicidal intent. She was admitted in a hospital near her house and received standard therapy with atropine and pralidoxime. She had intubated in view of respiratory failure and extubated within 48 hours on improvement. During her convalescence there, she began developing involuntary jerking movements of her limbs on day 10 after ingestion of the organophosphate. The following day she was referred to our institution.

On presentation at our hospital, the patient was conscious, oriented to time, place and person and her vitals were within normal limits. Her neurological examination revealed, intact higher mental functions, mid-dilated pupils and brief, rapid jerky movements in all four limbs and her tongue. Her muscle tone and power were normal and deep tendon reflexes brisk with plantars being flexor. A diagnosis of generalised multifocal myoclonus was made.

Her blood and urine investigations were within normal limits except for leucocytosis (urinary catheter related infection). An MRI brain was done with diffusion weighted imaging and was normal, and Electroencephalography was normal as well. She was started on Levetiracetam 250mg twice a day (intravenous followed by oral) and the myoclonic jerks resolved by the third day. A final diagnosis of generalised multifocal myoclonus secondary to organophosphate poisoning was made.

Patient was discharged on the same dose of levetiracetam and has been asked to follow up on out-patient basis.

<b>Table: Baseline investigations</b>			
<b>Hb</b>	12.1 g/dl	<b>Total protein</b>	7.1 g/dl
<b>TLC</b>	17,300 /mm <sup>3</sup>	<b>Albumin</b>	3.5 g/dl
<b>DC</b>	N-84, L-12, E-4	<b>Globulin</b>	3.6 g/dl
<b>Platelet Count</b>	318,000/mm <sup>3</sup>	<b>SGOT</b>	80 U/L
<b>ESR</b>	5mm at 1 hour	<b>SGPT</b>	128 U/L
<b>Sodium</b>	139 mmol/L	<b>Total Bilirubin</b>	0.52 mg/dl
<b>Potassium</b>	3.47 mmol/L	<b>Direct Bilirubin</b>	0.11 mg/dl
<b>Chloride</b>	97.5 mmol/L	<b>Calcium</b>	9.0 mg/dl
<b>Urea</b>	25.9 mg/dl	<b>Random Sugar</b>	103 mg/dl
<b>Creatinine</b>	0.49 mg/dl	<b>Serum Ammonia</b>	47.7 µmol/L
<b>Uric Acid</b>	2.4 mg/dl	<b>Viral Serology (HIV, HCV, HBsAg)</b>	Negative

### Discussion

Neurological manifestations of organophosphate poisoning are well known to most practitioners in developing countries like India. Besides the three classical syndromes mentioned above, the delayed neuropsychiatric effects including behavioural changes and cognitive defects are also known to most.<sup>[4]</sup> A search of literature

however revealed only one reported case of a patient manifesting with opsoclonus and lingual myoclonus following acute organophosphate ingestion.<sup>[5]</sup> Cases with generalised myoclonus were not previously known to occur following organophosphate poisoning and should now be included among the numerous organophosphate related neurological manifestations.

#### References

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