

## Neem Oil Poisoning

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### ABSTRACT

*We report an unusual case of neem oil poisoning in a previously normal 5 year old child. The child presented with refractory seizures and was having metabolic acidosis. Late neurological sequelae in the form of auditory and visual disturbances, and ataxia were present.*

**Key words:** *Neem oil, Poisoning, Status epilepticus.*

### INTRODUCTION

Neem oil has been used from time immemorial in Indian folk medicine. Neem oil is also used as a pesticide, and in cosmetics such as soaps and shampoos. Ingestion is usually accidental, or may be due to nasal instillation for common cold in children as practiced in some parts of South India. Even small doses of neem oil can cause severe metabolic acidosis along with seizures, which can be refractory. Late neurological sequelae are also known.

### CASE REPORT

A 5-year old previously healthy boy was brought in status epilepticus an hour after accidental ingestion of neem oil. On admission, his Glasgow Coma Score (GCS) was 5 with pupils dilated and sluggishly

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reacting to light, and brisk reflexes. The patient had tachycardia and was dyspneic. The management was started immediately, but the patient did not respond and went into cardio-respiratory arrest. The child was resuscitated and put on mechanical ventilator. Midazolam drip was started to control convulsions.

On admission, blood sugar was 300 mg/dL; hemogram showed marked neutrophilic leucocytosis and serum calcium was 8.2 mg/dL. Serum electrolytes, liver function tests, prothrombin time and activated partial thromboplastin time were normal. Arterial blood gases showed partially compensated metabolic acidosis.

The child was gradually weaned off the ventilator. On the 3rd day, he was conscious with a GCS of 12 with normal reflexes. The MRI scan of the brain was normal. The EEG performed on the 7th day was also normal. Other investigations that were repeated showed improvement, except for raised SGPT (816 U/L) and marginally high blood ammonia (102 mcg/dL). Though he showed improvement in his general condition, neurodeficits remained and his higher functions were disturbed. The patient did not recognize his parents, was unable to sit without support and had no bladder or bowel control. There were choreoathetoid movements of all limbs and his speech was incoherent. Follow up after 2 months showed no improvement.

### DISCUSSION

Neem oil, also known as Margosa oil, is obtained from the neem plant (*Azadiracta indica Juss*). Oil is extracted from the neem seed kernels. It contains neutral oils such as palmitic and stearic acids. The active ingredients are terpenoids such as azadirachtin, nimbin, picrin and sialin(1). It also contains aflatoxin, but in very low concentrations. Azadirachtin is attributed with the pesticide action of neem oil(2). Neem oil is used as a base for many herbal medicines and is also used in cosmetic products(3). It is also said to be effective as a contraceptive in males(4).

Our case had neurodeficits due to hypoxic brain damage as a result of cardiac arrest. However, there

are cases reported in which neurological sequel have been reported without cardiac arrests. Animal studies were performed at forensic laboratory on mice, which showed symptoms such as salivation, diarrhea, tremors, convulsions and even death. The severity of symptoms was dose dependent. Exact toxicity level doses for humans are not known.

No specific antidote is available and gastric lavage is not recommended. The management is primarily symptomatic. Cases presenting only with mild vomiting and gastrointestinal features far better than those with CNS manifestations(5). The prognosis is usually good.

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