

Case Report

Attempted Suicide with Mosquito Coil Consumption: A Rare Case of Poisoning in Adults

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Abstract: Allethrin, present in mosquito coil is a pyrethroid pesticide. Pyrethroids are used as insecticides worldwide. Self poisoning with mosquito coil is very rare. We describe a case of attempted suicide by consumption of mosquito coil. Patient recovered without any sequel.

Keywords: Allethrin, Mosquito coil, Pyrethroids..

INTRODUCTION

In 1949, the first pyrethroid pesticide allethrin was identified. Allethrin, present in mosquito coil is a type I pyrethroid [1]. Despite their extensive use, there are few reports of human pyrethroid poisoning. However we recently saw a patient who tried to commit suicide by ingesting mosquito coil.

CASE REPORT

The patient was a 22 years old female without any diseases attempted to commit suicide by ingesting mosquito coil. She powdered the coil, mixed with water and consumed the mixture. On admission, three hours after the ingestion of mosquito coil, the patient was conscious and her vitals were normal and systemic examination was normal. Complete hemogram, liver function test, renal function test, electrolytes, prothrombin time, random blood sugar, electrocardiogram, and chest radiograph on admission were normal. Gastric lavage was given. She was treated symptomatically with intravenous fluids. She was discharged after six days of uneventful observation. Laboratory profiles remained normal throughout the observation period.

DISCUSSION

Pyrethroids are common insecticides. They are used both in the home and commercially. There are two types of pyrethroids. Mosquito coil contains allethrin, which is a type I pyrethroid. Deltamethrin and fenvalerate are type II pyrethroids. Type II pyrethroid lacks a cyano group [1]. Pyrethroids mainly act on sodium and chloride channels. Principal target organs of pyrethroid toxicity are nerve and muscle cells [2]. By acting on sodium channels, allethrin causes repetitive

discharges in nerve fibres leading to hyperexcitation. Type II pyrethroids causes nerve membrane depolarization and block leading to paralysis [1, 3]. Type II pyrethroids also act on GABA-gated chloride channels [4]. Calcium channels and peripheral benzodiazepine receptor are also affected in pyrethroid poisoning [1]. Pyrethroid are metabolised rapidly in the liver by ester hydrolysis, methyl oxidation and conjugation reactions, producing inactive acids and alcohol components. Metabolites are excreted mainly in urine [1]. Pyrethroids are less toxic to humans than insects. Protective mechanisms in humans are poor dermal absorption and rapid metabolism to non toxic metabolites [1, 5]. Clinical features on acute exposure depend on route of exposure. Pyrethroid ingestion results in sore throat, nausea, vomiting and abdominal pain. Our patient had nausea and vomiting. Some patients had mouth ulceration, increased secretions and dysphagia [6]. Skin exposure may result in paraesthesiae. The adverse effects of inhalation are nasal and respiratory irritation [1]. Principal life threatening systemic effects following pyrethroid exposure are coma and convulsions [6]. Aspiration pneumonitis and pulmonary oedema are pulmonary complications of pyrethroid poisoning [7]. Systemic toxicity was absent in our patient.

Sinus tachycardia, ventricular ectopics, and sinus bradycardia are electrocardiogram changes reported in acute pyrethroid poisoning [6, 7]. Our patient electrocardiogram was normal. Most cases of acute pyrethroid poisoning recover within six days. Deaths have been reported in some cases due to convulsions [1]. Our patient recovered within 2 days.

The treatment is entirely supportive and symptomatic. Clinical features are similar in acute pyrethroid poisoning and organophosphorus intoxication. Reduced red cell cholinesterase activity in acute organophosphorus poisoning allows clarification [1]. Our patient red cell cholinesterase activity was normal.

Diazepam is useful in the treatment of prolonged convulsions and muscle fasciculation. Intravenous atropine may be useful in hyper salivation.

CONCLUSION

In conclusion, mosquito coil (allethrin) poisoning is rare in adults. There are limited data in India on the features of severe allethrin poisoning and its management. More studies are needed so that the management of severe mosquito coil poisoning may be optimised.

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