

INTOXICATION BY THE BERRIES OF CORIARIA MYRITFOLIA - A CASE REPORT

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ABSTRACT

Coriaria Myritfolia is a shrub that grows 2-3 meters tall. The exact local name of the plant is unknown, but in Hindi, some species of Coriaria are called "Divi-Divi". We report a case of intoxication following ingestion of fruits of Coriaria Myritfolia. A 6-year-old boy, the previously healthy child, was brought to the pediatric emergency department after accidentally ingesting red berries from a tree growing wild in district Haripur. On inquiry, the parents of the child reported that after the ingestion of an unknown quantity of fruit, the child felt nauseated and vomited. We sought care from a local Physician who treated the outpatient as a case of food poisoning. The child didn't get better and, after 4-6hr from the ingestion of berries, felt a generalised-tonic-clonic seizure with up rolling of the ball and incontinence. The parents immediately brought the child to a tertiary care hospital. Upon arrival at the hospital, the patient was somnolent with generalised hypotonia. The Prophylactic 10mg Diazepam (0.4mg/kg) is given per rectal. The peripheral intravenous line passed. Initial labs were not conclusive except for hypokalemia and metabolic acidosis. He was started on the prophylactic antiseizure elixir of Phenobarbital 5mg/kg/day and levetiracetam 400mg/day. CT brain was normal. The patient was discharged after 3rd day of admission on anti-seizure medications. We concluded that the intoxication with the fruits of Coriaria Myritfolia could be managed successfully if the patient came to the hospital within 6-8 hours with anti-seizure medications.

KEYWORDS: Divi-Divi, Coriaria Myritfolia, Pakistan, Toxicity, Sweet Poison

INTRODUCTION

Coriaria myrtifolia is known by a variety of different names; it is also called sweet poison due to its sweet berries; it produces reddish, attractive, shiny berries which are lovely. Africa criteria is commonly known as Redoul or Redoulin in Europe and North Africa-the most common name used in botanical and horticulture context.¹ In America and the Caribbean, this plant is known by the name Divi-Divi. The name divi-divi originated from Hindi, which means - to split . Khyber Pakhtunkhwa is commonly known as Nagar or Nagari, while in some areas of Pakistan, it's known as Kharay.^{2,3} Coriaria myrtifolia is a 2-3 meters tall shrub found in the Himalayas, usually between 1000-2500 meters above sea level. This plant is distributed in some areas of all provinces of Pakistan. In Khyber Pakhtunkhwa, the common areas where this shrub grows and is found are Swat, Dir, Malakand, Buner, Shangla and Kohistan. Both the leaves and the fruit contain a neurotoxin called coriamyrtin and didehydrocoriamyrtin.^{3,4} These toxins have multiple actions on neurons; these toxins inhibit acetylcholine esterase (AChE), which in return increases the level of acetylcholine in the brain. Coriamyrtin also has antagonistic activity on GABAA receptors.⁴ We report a rare case of coriaria myrtifolia, which gets

complicated by brain toxicity. The case was managed successfully in the emergency department of Ayub Medical Teaching Institute Abbottabad.

CASE REPORT:

A 6-year-old boy, the previously healthy child, was brought to the pediatric emergency department after accidentally ingesting red berries from a tree growing wild in district Haripur. The family bring the branch of the shrub shown in figure 01. On inquiry, the parents of the child reported that after the ingestion of an unknown quantity of fruit, the child felt nauseated and vomited. We sought care from a local Physician who treated the outpatient as a case of food poisoning. The child didn't get better and, after 4-6hr from the ingestion of berries, felt a generalized-tonic-clonic-seizure with up rolling of the ball and incontinence. The parents immediately brought the child to a tertiary care hospital. Upon arrival at the hospital, the patient was somnolent (GCS: E3, V4, M5), generalised hypotonia, but the hemodynamic status was good. The weight of the baby was 25 kg at presentation. The Prophylactic 10mg Diazepam (0.4mg/kg) is given per rectal. The peripheral intravenous line passed. Appropriate labs were ordered, including Complete blood count, blood sugar, and electrolytes, including calcium. The patient felt another

episode of seizures, which was aborted with 2.5mg (100 microgram/Kg) of intravenous midazolam diluted in 5cc normal saline. The patient was admitted to the pediatric unit. The nasogastric tube was passed, and air was placed in the mouth. He was started on a prophylactic antiseizure elixir of Phenobarbital 5mg/kg/day (Elixir Debritone 20mg/5ml) and oral solution of levetiracetam 400mg/ day in 2 divided doses (syrup race 100mg/ml). The serum chemistry shows calcium of 7.8 mg/dl, sodium of 129mg/dl, potassium of 2.8mg/dl and chloride of 98mg/dl. The Atrial blood gases show a PH of 7.30, HCO₃ of 19mg/dl, oxygen of 75mmof hg and CO₂ of 42mm of Hg. The finger-stick glucometer shows a reading of 5.5 milli mole. On the next day, the brain CT was ordered to rule out an intracranial lesion, which also turned out to be expected. The patient was oriented to time and place, and his oral intake improved, but he complained of perioral numbness and flickering movements in the facial muscles. His chewing strength was expected, and the cranial nerves were intact. The rest of the examination was unremarkable. The patient was discharged after 3 days, and a follow-up was made after 4 days. The patient was continuing on antiseizures for 4 days. On the follow-up visit, the patient's examination was regular. No adverse event was noted. The syrup Levetiracetam was stopped, and the phenobarbital dose was weaned gradually.



Figure 1: Berries of Coriaria Myrtifolia Bought by Patients' Parents

DISCUSSION

Coriaria myrtifolia is a shrub which bears fruit (toxic berries) from June to September. The child usually confuses the berries of criteria with other edible berries, so poison is common in the young age group.^{5,6} Both

the leaf and fruit intoxication are reported in the literature, but in our case, intoxication occurs due to fruit. The toxic dose is not quantified precisely, but 2-3 berries are enough to produce the neurological symptoms and can require admission to the hospital.⁴ Some studies have suggested that intoxicated chemical decreases the GABA levels in the brain, which leads to seizures.^{7,8} Children are the most common victims of this plant because its berries (fruit) are attractive, charming and sweet; hence, it is also called sweet poisoning. We observe only seizures as a neurotoxicity of Coriaria, while other studies also reported trismus, opisthotonus, apnea and coma.⁴ In this case, we successfully treated the neurotoxicity with Diazepam, Phenobarbital and levetiracetam. In a case reported by de Haro L et al., an intoxication of 8 years old child was treated successfully with benzodiazepine. In a letter to the editor by Yen-Chin Chen, he reported the successful treatment of 2 such cases with diazepam. Our case delineated the neurological toxicity of Coriaria species, which is potentially life-threatening if it cannot be intervened in a timely. We provided the details of local names, geographical areas, and pictorials to identify them earlier and help the emergency physician identify poisonous plants early.

LIMITATIONS

This report is limited by the lack of confirmatory toxicological analysis, reliance on clinical presentation, and absence of long-term follow-up. Further studies are needed to establish standardized management protocols.

CONCLUSIONS

The delayed toxicity of sweet poison led to an imbalance in neurotransmitters in the brain. This led to seizure genic activity in the brain, which could lead to irreversible brain damage, especially in young children. The fruit(berries) is toxic, and 2-3 can produce harmful effects. Patients should be admitted after intoxication because the neuronal side effects are delayed. Early management within 6-8 hours can prevent further seizures and permanent brain damage.

CONFLICT OF INTEREST: None

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CONTRIBUTORS

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