

Intoxication due to Datura a case report

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Abstract

Poisoning of a young male caused by the intake of extracts prepared from the plant Datura is presented. Datura is a wild growing plant widely distributed and easily available. It is a broadleaf annual erect herb with spine covered seed capsules. It contains a variety of toxic alkaloids such as atropine, hyoscyamine and scopolamine, cause a series of characteristic classic symptoms of anti-cholinergic poisoning. However, Datura poisoning is most frequently occurs due to plant abuse by adolescent addicts. Stupefying, Aphrodisiac, Suicidal and homicidal purpose. A high index of suspicion and early management of poison is imperative if a favorable outcome is expected. Here, a non-fatal case of poisoning of Datura in a young male, aged 35 years is presented along with a brief description about the management. Early presentation and the presence of an eye witness contributed to the very good outcome in the case being described by us.

Key words : Datura, imperative, poisoning, abuse.

Introduction

Datura is a wild plant grown all over the country in both urban and rural areas. It is a hallucinogenic wildy growing plant. The common names include Jimson weed, Thorn apple, Stink weed, Angels trumpet, Jamestown weed. It belongs to Solanaceae family. The plant is native to Asia, Indian species. There are varieties of Datura fastuosa Datura Niger (purple flower), Datura Alba (white flower), Datura Stramonium, Datura Metal and Datura Atrox.¹ It grows on waste places all over Bangladesh.

Datura mainly contains the tropane alkaloids atropine , hyoscyamine (scopolamine) and hyoscyamine. Uses of Datura have long histories of hallucinogenic use and have been connected with sorcery, witchcraft, native medicine and magico-religious rites dating back to 1500 BC and Homer's Odyssey. (Homer's use of the plant moly as an antidote to Circe;s poisonous anticholinergic drugs may have been the first recorded use of an anti cholinesterase to reverse central anticholinergic intoxication). Chinese herbal medicines containing tropane alkaloids have been used to treat asthma, chronic bronchitis, pain and flu symptoms. In Mexico, Datura is taken by Yaqui women to lessen pain of childbirth. In Africa, a common use is to

smoke leaves from Datura to relieve asthma and pulmonary problems. Many cultures world wide add plants with tropane alkaloids to alcoholic beverages to increase intoxication. Recently, Datura has been used as a recreational hallucinogen in the US, resulting in sporadic cases of anticholinergic poisoning and death.¹ The name Datura is taken from Hindi Dhatura "Thorn Apple ultimately from Sanskrit Dhatura white thorn apple. In the Ayurvedic text Sashrata different species of Datura are also referred to as Kanaca and Unmatta. Record of this name in English dates back to 1662. In Mexico its common name is Toloache. It is used in rituals and prayer to Shiva.²

Case report

Man aged 35 years ,bread winner of the family while travelling in bus was offered jhalmuri by an unknown person sitting beside him. The man consumed jhalmuri immediately without any thinking or hesitation. After about 1 hour he started complaining giddiness, vomiting and he was in stupor ,drowsy condition. Later he was robbed by this same person. Immediately he was brought in a state of impaired consciousness to the emergency care unit of a hospital. He was accompanied by his friend

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and some other person in the bus. Initially, the medical officer thought it was a case of alcohol but on enquiry with his attendants gave the history of consumption of jhalmuri. Consistent with the history, he presented with typical signs and symptoms of datura poisoning. On examination, he was unconscious, febrile with axillary temperature of 38.7 degree Celsius, dry mouth and dilated reactive pupils bilaterally. He had tachycardia with pulse rate 130 beat/min and systolic hypertension with blood pressure of 150/60 mm Hg. There were no neurological signs and other systemic examination findings were normal. The man was diagnosed to have Datura poisoning, on the basis of eye witness and the clinical manifestations. He gradually improved clinically and survived with gastric lavage and activated charcoal. The man was treated symptomatically with antipyretic, IV fluid and diazepam. After 20 hours of admission he became fully conscious, co-operative and communicated intelligently. The recovery was uneventful. Then he was discharged home under treatment.

Discussion

Datura is a wild growing herb known as Jimson weed [1]. It also has several slang names-The most common is 'sac el ghoul'. The flowers are bell shaped or tubular. Leaves are dark green with pointed margins. The fruit is spherical in shape, green in colour, covered with multiple thorns (thorn-apple) and contains numerous reniform seeds upto 500 yellowish brown seeds. Fatal dose is 100-125 crushed seeds (0.6-1.0 gm). They bear a superficial resemblance to chilly seeds but they are large, brown coloured, kidney shaped, laterally compressed and double edged at the convex border, surface has numerous small depression, odorless, bitter to taste.³ On longitudinal section, embryo is curved outward at the hilum. All parts of the plant are poisonous, particularly the foliage and seeds. Seed is the most toxic constituent and contains the following active principles-Hyoscyamine (scopolamine), Hyoscyamine and Atropine, which are responsible for

anticholinergic syndrome resulting from the inhibition of central and peripheral muscarinic neurotransmission by these toxic components. The alkaloids first stimulate the higher centres and finally cause depression and paralysis, specially of the vital centres in the medulla. The respiration is first stimulated, then depressed and the heart centre is stimulated. Peripheral effects are predominant and result from anticholinergic (parasympatholytic) action [2].⁴ Datura is used as mydriatic, antispasmodic, pre-anesthetic medication and antidote for organophosphates and carbamates.³ It is also used as a herbal medicine for asthma, bronchitis, eczema, hemorrhoid treatment, as an ointment against muscle and joint pain. Children are mostly exposed to the poisoning by the plant species from the genus *Datura*, however the poisoning most frequently occurs due to plant abuse by adolescent addicts. In Europe, the seeds and plant extracts of *Datura stramonium* are used in the treatment of mania, epilepsy, melancholy, rheumatism and convulsions.⁵ Intentional poisoning with datura has also been reported. Ingesting datura for its mind altering properties eating and chewing the seeds of the plant in a suicidal attempt may be used.⁶

The clinical features are seen in 30-60 minutes after ingestion and may continue for 24-48 hours. They can be summarized in classic phrase known as Morton's feature 'blind as a bat', 'hot as a hare', 'dry as a bone', 'red as a beet', 'mad as a wet hen'. The main features are dryness of mouth, nausea, vomiting, dysphagia, dilated pupils, diplopia, photophobia, temporary blindness, dry hot skin, drunken gait, dysuria, impaired short term memory, disorientation, delirium with confusion, agitation, hallucination, drowsiness leading to coma and death due to respiratory failure or cardiac arrhythmias.⁷ Delirium is restless and purposeless in its earlier stage. The patient may be silent but usually he is noisy, tries to run away from the bed, picks at the bed clothes, tries to pull imaginary threads from the tips of the fingers.⁴ [2], threads imaginary

needles. Consumption of 100-125 crushed seeds can cause death within 24 hours.⁶ Children have a special susceptibility to atropine toxicity, even a small amount may produce severe central nervous system manifestations.

Treatment includes emetics, gastric lavage with tannic acid, 1% potassium permanganate solution. Activated charcoal can be administered. Physostigmine is the specific antidote. Pilocarpine nitrate is also useful but not actually used in late case. Delirium can be controlled by bromides and short acting barbiturates. Morphine is to be avoided because of the danger of depressing the respiratory centre. Light diet, purgatives and colonic lavage is also recommended. Artificial respiration and O₂ inhalation is given when required. Hyperpyrexia is controlled by fluids and other cooling measures. Symptomatic treatment with IV fluids and supportive care are to be given.⁵

Crushed or powdered seeds is used by criminals as stupefying agent and road side poison. Seeds are mixed with food or drink e.g. chapattis, curry, sweet, tea, jhalmuri, chanachur and given to the victim or travellers in railway station, bus stand, etc. More common uses are for criminal purposes like robbery, rape, kidnapping.⁸ The drowsy or stupefied victim is robbed off his money or valuable articles.⁹ When such a person or victim goes to either the police or the railway authorities to lodge a complaint that his pocket has been picked, nobody is inclined to believe him, mistaking him for a drunk. Such is the advantage of datura as a road poison. Accidental poisoning is common in children. Sometimes it is used as abortifacient agent, aphrodisiac agent and love philter. Cigarettes made from the leaves of the datura plant used to be smoked in former days for the relief of bronchial asthma. These are called stramonium cigarettes and caused bronchodilatation.¹⁰

Conclusion

Persons must have access to correct and detailed information on poisoning prevention since it remains one of the effective interventions in solving health and social

challenges facing them. Correct and detailed information is essential to prevent misinformation from peers. Parents and children should be counseled about potential poison and poison risks, including dangers associated with substance abuse. One of the most important challenges in Datura poisoning is the delay in making diagnosis. A high index of suspicion and early management of poisoning in children is imperative if a favorable outcome is expected. Early presentation and the presence of an eye witness contributed to the very good outcome in this case.

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