

Jatropha Curcas - Poisoning

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Abstract. *Jatropha curcas* is common plant found all over India more commonly in the southern parts. Though it is a common cause of accidental poisoning among children in these parts, standard texts rarely cover it. Gastrointestinal manifestations are predominant feature of poisoning with the seeds of *Jatropha curcas*. Mortality is rare. [Indian J Pediatr 2005; 72 (1) : 75-76]

Key words : *Jatropha curcas*; Curcin; Physic nut

Jatropha Curcas (Physic nut; Hindi – *Jungle Erandi*) is an evergreen plant found commonly throughout India, especially in Southern Parts of the country. Though the plant grows in wastelands, it is cultivated mainly for hedges. Traditional practitioners commonly use it for many medical conditions.

In spite of its ubiquity and propensity to cause many adverse effects on accidental consumption; not much information about this plant is available in leading toxicology and forensic medicine books of India.^{1,2,3} About 10-15 isolated cases of poisoning by this plant per year are reported to authors (unpublished data). Recently an episode of mass toxicity in 20 children presented. We wish to share our experiences of clinical presentation, treatment, and outcome of inadvertent consumption of different parts of this plant.

CASE REPORT

Twenty children of a school were admitted to pediatric emergency ward of Chigateri Hospital, Davangere on December 1, 2003 with complaints of vomiting and loose stools following consumption of nuts of *Jatropha Curcas* (*J. Curcas*). The general condition of all the children was good, and the reason for consumption was found to be curiosity about the attractive nuts of the plant. Few children also had other complaints like abdominal pain, headache, and fever. One child was asymptomatic. None of them had evidence of dehydration. Affected children were of the age group 8-13 yrs with male : female ratio being 8:13. The number of seeds consumed were 1- 4 (median 2). Vomiting was the predominant symptom (95% of cases), 50% of cases also had diarrhoea, 40% had headache and 40% had fever. Abdominal pain was dominant in 25% and 5% of cases were asymptomatic. The lag time before onset of symptoms varied between 30

minutes to 2 hours. The vital signs in all patients were within normal limits for the age group. Average recovery time was 5-6 hours.

All the children were treated symptomatically with intravenous fluids and antiemetics. Within 6 hours, all of them recovered. They were kept for 24hr observation and were discharged the next day.

DISCUSSION

J. Curcas is a small tree about 5 metre tall. The leaves are lobed, green and smooth (Fig). The flowers are small, yellow and are mostly hidden by the leaves. The stem is thick, green, glabrous becoming woody at the base. The fruit is ovoid, oblong and contains 3 lobes with each lobe containing a seed. The fruit looks attractive (Fig) and closely resembles cashew fruit though it bears no relationship to the latter.

The poisonous property of the plant is mainly due to presence of toxalbumin called curcin and cyanic acid⁴.

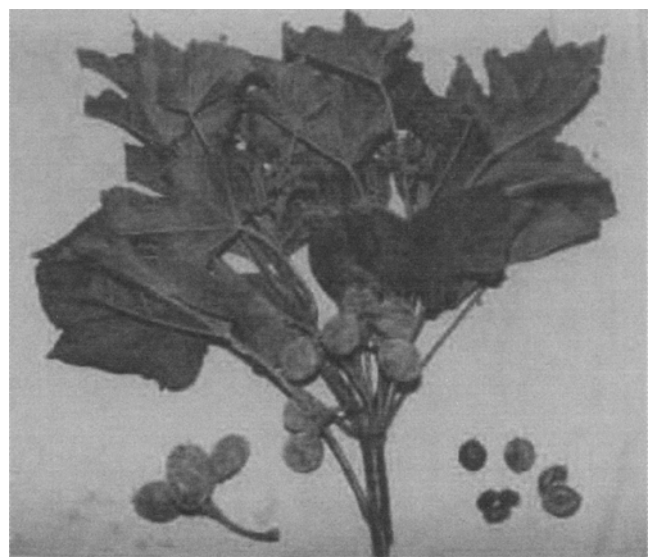


Fig. 1

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Though all parts of the plant are poisonous, seeds have the highest concentration of the toxin and are highly poisonous. The adverse effects following consumption of seeds result primarily from gastroenteritis as seen in the present study. The clinical symptoms include vomiting, diarrhoea, abdominal pain, and burning sensation in the throat. Depression and circulatory collapse have also been reported and are said to be common in children⁵. Human deaths by this plant have not been reported so far though animal deaths can occur.⁶ The toxic dose is not known. In some instances consumption of as few as 3 seeds has produced toxic symptoms; while in others, as many as 50 seeds produced relatively mild symptoms. Though it is commonly believed that roasting detoxifies the seeds, catastrophes have been reported after eating roasted seeds.

Despite the above-mentioned harmful effects, the seeds are used for various purposes. The yellow oil (also called Hell oil!) is extracted from the seeds and is used for many medical conditions like eczema, herpes, indolent ulcers, chronic rheumatic pain etc. In Homeopathy, it is used for cold sweats, colic, cramps, diarrhoea etc. The oil is also used for soap making, candle making and adulteration of olive oil. Nuts ground and mixed with palm oil are used as rat poison. Medically it is used for purgation and as a styptic.⁶ Recently, the toxin (curcin)

has been shown to have antitumor property.⁶ The latex of the plant has been shown to have hemostatic property.⁶

It is interesting and at the same time surprising that a common poison found in this part does not find enough coverage in medical toxicology books, though there is ample information available in books of other sciences. The very purpose of this article is to make the practitioners aware of this common toxin amidst them.

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