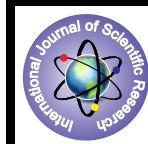


# Jatropha Curcas Poisoning: A Case Report



## Medical Science

KEYWORDS :

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### ABSTRACT

Jatropha Curcas has got various species belonging to family of Euphorbiaceae and is known as Barbados Nut, Black Vomit Nut, Curcas Bean, Purge Nut etc. in different parts of the world. It grows widely in arid climate. All parts of the plant are considered poisonous as they contain active ingredients which are known to cause symptoms but in particular the seeds - which contain various phytotoxins and purgative oils, are most poisonous. As per limited literatures available on the subject, the toxic products of Jatropha are known to cause nausea, vomiting, diarrhoea and atropine like symptoms. Twenty cases of Jatropha poisoning were admitted to a secondary care hospital in South India. All these patients had a history of intake of Jatropha seeds. They developed a symptom complex of abdominal discomfort with pain, nausea, vomiting and diarrhoea. Some of them had developed moderate to severe dehydration. The patients were treated conservatively based on their symptoms. All of them recovered uneventfully and were discharged. These cases are being reported as they are relatively uncommon and hence a need for creating awareness is envisaged.

### INTRODUCTION

Jatropha Curcas grows well in poor soil and is drought resistant. The plants are commonly known as 'adavi amadam or pepalam' in Andhra Pradesh, 'Jamalgutta' in Hyderabad and Ratanjyot in Gujrat. Seeds of this plant contain oil and are grown in many parts of India for bio-diesel. It is a small tree or shrub with smooth gray bark, which exudes whitish coloured watery latex when cut. Normally it grows between three and five meters in height, but can attain a height up to 8 to 10 meters under favourable conditions (1). Only a few cases of Jatropha Curcus poisoning were found in the literature search from India and abroad (1-5).

The seeds contain 21% saturated fatty acids, 79% unsaturated fatty acids and yield 25-40% oil by weight (6). Jatropha also contains Curcasin, arachidic, linoleic, myristic, oleic, palmitic, and stearic acids and curcin. Leaves contain isovitexin and vitexin. From the kernel saccharose, raffinose, stachyose, glucose, fructose, galactose, protein are also available (7).

There is usually a delay of half an hour or more after consumption of the toxin containing part(s) of the plant before the symptoms begin which are largely pertaining to gastrointestinal irritation. There is acute abdominal pain, burning sensation in the throat followed by nausea, vomiting and profuse diarrhoea. In severe poisoning, the faeces and vomitus may contain blood. There may be CNS and cardiovascular depression and children are more susceptible (7)

### CASE REPORT

A group of twenty young male in their late teens or early twenties presented with the history of abdominal discomfort with pain, nausea, vomiting and diarrhoea at a secondary care hospital in Southern India. None of them had blood in vomitus or faeces. All these patients had a history of intake of Jatropha seed (which tastes like almond to some extent) in the same morning before having their breakfast. Further enquiry revealed that a seed was initially consumed by one of them who informed others about the good taste of the seed and then the others followed suit. The quantum of consumption of Jatropha seeds varied from one (01) to six (06). The symptoms started after a

variable period of 25-45 minutes following consumption of the Jatropha seed(s). All patients were treated conservatively. The patients became asymptomatic over a period of 24 to 48 hours and were discharged. There were no complications whatsoever during a month long follow up. Table No-1 depicts the details of the patients and their presenting symptoms. The clinical findings and laboratory findings of these patients are given in Table No- 2 and 3 respectively.

**Table No-1  
Details of the patients of Jatropha poisoning and their presenting symptoms**

Case No.	Age (Yrs)	Nos of Jatropha seeds consumed	Time interval of onset of symptoms following ingestion of Jatropha seeds (in minutes)	Symptoms		
				Abdominal Pain	Vomiting	Diarrhoea
1.	22	4	20	Present	Present	Present
2.	20	2	25	Present	Present	Present
3.	23	2	30	Present	Present	Present
4.	21	3	30	Present	Present	Present
5.	24	3	25	Present	Present	Present
6.	21	2	15	Present	Present	Present
7.	21	2	25	Present	Present	Present
8.	21	2	30	Present	Present	Present
9.	21	3	30	Present	Present	Present
10.	22	2	25	Present	Present	Present
11.	20	2	20	Present	Present	Present
12.	23	3	20	Present	Present	Present

13.	19	2	20	Present	Pre-sent	Present
14.	20	2	25	Present	Pre-sent	Present
15.	18	3	15	Present	Pre-sent	Present
16.	20	3	15	Present	Pre-sent	Present
17.	22	3	25	Present	Pre-sent	Present
18.	21	2	20	Present	Pre-sent	Present
19.	21	2	20	Present	Pre-sent	Present
20.	20	3	25	Present	Pre-sent	Present

**Table No-2**  
**Clinical findings of the patients of Jatropha poisoning**

Case .No.	Dehydration <sup>®</sup>	Pulse <sup>®</sup>	Blood Pressure (mm of Hg)	Temperature	Sys-temic Ex-ami-nation Find-ings <sup>®</sup>	ECG <sup>®</sup> Find-ings	Period of Hospital-ization (days)
1.	D++	98	110/70	Afebrile	NAD	WNL	2
2.	D++	92	120/76	Afebrile	NAD	WNL	1
3.	D+	86	130/80	Afebrile	NAD	WNL	1
4.	D+	86	120/76	Afebrile	NAD	WNL	1
5.	D++	92	120/72	Afebrile	NAD	WNL	2
6.	D+	98	110/70	Afebrile	NAD	WNL	2
7.	D++	92	120/96	Afebrile	NAD	WNL	1
8.	D+	86	130/80	Afebrile	NAD	WNL	1
9.	D++	86	112/72	Afebrile	NAD	WNL	2
10.	D+	92	114/76	Afebrile	NAD	WNL	2
11.	D++	86	118/70	Afebrile	NAD	WNL	2
12.	D++	90	116/76	Afebrile	NAD	WNL	1
13.	D+	80	130/80	Afebrile	NAD	WNL	1
14.	D+	86	120/76	Afebrile	NAD	WNL	1
15.	D++	96	116/76	Afebrile	NAD	WNL	2
16.	D+++	100	110/68	Afebrile	NAD	WNL	2
17.	D++	90	120/76	Afebrile	NAD	WNL	1
18.	D+	86	130/80	Afebrile	NAD	WNL	1
19.	D+	86	120/74	Afebrile	NAD	WNL	1
20.	D++	92	120/72	Afebrile	NAD	WNL	1

@- D+ - Mild Dehydration, D++ - Moderate Dehydration, D+++ - Severe Dehydration # - Beats per minute \$- NAD - No Abnormality Detected &- WNL- Within Normal Limits

**Table No-3**  
**Laboratory findings of the patients of Jatropha poisoning**

Case .No.	Haemoglobin (in g%)	SGOT (in IU)	SGPT (in IU)	Blood Urea (in g%)	Serum Creatinine (in g%)
1.	13.4	24	41	21	0.8
2.	14.0	24	36	21	0.8
3.	14.4	24	41	21	0.7
4.	13.4	21	36	23	0.9
5.	13.6	24	38	22	0.9
6.	14.4	24	41	24	0.8
7.	14.0	21	36	22	0.8
8.	14.4	24	41	21	0.6
9.	14.4	24	34	22	0.8
10.	13.8	24	36	21	0.8
11.	13.4	24	41	21	0.8
12.	14.0	26	36	23	0.9
13.	14.4	26	41	20	0.8
14.	13.0	21	36	21	0.7
15.	13.4	24	36	21	0.8
16.	13.4	22	42	26	0.8
17.	14.0	24	36	26	0.9
18.	14.0	24	41	21	0.7
19.	13.6	21	36	21	0.8
20.	13.4	24	36	26	0.9

### OBSERVATIONS

The diagnosis of Jatropha poisoning in this case report was made by a positive history of consumption of Jatropha seeds and a temporal relation with the onset of typical signs and symptoms. The mean time interval between the consumption of Jatropha seed and onset of symptoms was 23 minutes with a Standard Deviation (SD) of  $\pm 4.95$  minutes. The median was 25 minutes. The patients developed symptoms even with consumption of a single Jatropha seed. In this series severity of clinical features were not found to be consistent with the number of seeds consumed. None of the patients developed fever and there were no features of cardiac involvement in any one of them. Biochemical parameters were not deranged. Giddiness was not complained by any subjects as found in a previous case report (1). Recovery was uneventful for all cases.

There is a felt need to create awareness among the medical professionals as well as lay public about the Jatropha poisoning since the seeds are good to taste, the plants are available ubiquitously and its cultivation as a source of bio-fuel is on the rise. Text books on Medical Jurisprudence and Toxicology may lay more emphasis on this potentially hazardous plant.

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