

Castor Bean Ingestion and Ricin Toxicity in a Case of Attempted Suicide

The Editor,

Sir,

The castor bean plant (*Ricinus communis*) grows wild in tropical climates and is cultivated in many countries for decorative purposes. Recently, its cultivation was proposed as a source of bio-fuel in Jamaica. The beans, however, contain high concentrations of ricin, a potentially lethal poison that is sometimes used in suicide attempts and is considered a possible agent for use in bio-terrorism (1). The medical literature contains reports of over 400 cases of castor bean intoxication with a case fatality rate of 8.1% (2). There are no published reports of castor bean intoxication in Jamaica.

This letter reports a case of castor bean intoxication in a forty-year old woman recently admitted to a hospital in Jamaica. The patient presented to the emergency department approximately nine hours after ingesting eight crushed castor beans in an attempt at deliberate self-harm.

Four hours after ingestion of the crushed castor beans, the patient developed abdominal pain and vomiting. Shortly afterwards, she also developed severe diarrhoea with several episodes of loose watery stool and associated weakness. On presentation to the emergency department, she had normal vital signs (blood pressure 110/80 mmHg, pulse 68/minute, respiration 20/minute and temperature 98°F). Except for mild epigastric tenderness, physical examination was unremarkable. Initial laboratory studies showed normal electrolytes and liver function test and she had a normal electrocardiogram. She was seen and evaluated by a psychiatrist with regard to the suicide attempt.

Management was supportive with intravenous fluids and monitoring of vital signs, electrolytes and liver enzymes. Vomiting subsided within the first 24 hours but she continued to have loose stool for approximately 72 hours. Repeat laboratory studies showed elevated transaminases on day three (alanine transaminase [ALT] 100 U/L, aspartate transaminase [AST] 57 U/L), but by then diarrhoea had subsided and the patient was otherwise well. Repeat studies on day four revealed that the transaminases were trending downwards (ALT 87 U/L, AST 42 U/L) and she was discharged with plans for general medical review with repeat laboratory studies and review by her psychiatrist.

Of note, the patient had a previous history of depression and had been seen by a psychiatrist but had defaulted from follow-up. She had learnt of the potential toxicity of castor beans by researching the subject on the internet.

Given the wide availability of castor beans (3, 4), clinicians should be made aware of the potential toxic effects and that it may be used in suicide attempts. Clinicians should also be aware of its potential use in bio-terrorism and homicide.

Symptoms of ricin toxicity are non-specific and may initially appear to be uncomplicated gastroenteritis, but this may progress rapidly to severe dehydration, hypotension and multi-organ failure (1, 3, 4). Onset of symptoms is usually within four hours and often progress for up to 36 hours. There is no clinically validated method for detection of ricin in biological fluids but tests may be done in research laboratories. No antidote is available. Management is therefore mainly supportive with the use of intravenous fluids and vasopressors if the patient has severe hypotension (1, 3). Appropriate management of fluid and electrolytes will improve the likelihood of favourable outcome.

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