

Datura fruit poisoning

Wai-Mun Chung, MMed, Yee-Yau Chian, MBBS, Azmir-Anuar, MMed

Emergency and Trauma Department, Hospital Taiping, Taiping, Perak, Malaysia

SUMMARY

Datura plants contain anticholinergic properties. Consumers may present with a spectrum of anticholinergic symptoms, including hallucination, agitation, tachycardia, delirium, hyperthermia, and dilated pupils. Prompt identification of the symptoms with appropriate treatment can be life-saving. Some patients might not be able to provide history and therefore recognition of toxidromes is imperative. Awareness should be built among the public who may be exposed to such fruits or plants.

KEY WORDS:

Datura fruit, poisoning, toxidrome

INTRODUCTION

Wild plants are occasionally being consumed in rural areas without knowing their safety profile. This phenomenon is rather dangerous as the unknown properties of these plants might cause serious multisystem effects. This case series illustrates a couple who consumed Datura. Datura, is a genus from the family of Solanaceae, which on consumption produces anticholinergic effects. The diagnostic and therapeutic dilemmas fall into a spectrum of clinical toxidrome presentations which is rather challenging.

CASE PRESENTATION

Case 1

A 41-year-old healthy Burmese woman, with no known comorbidities presented to emergency department (ED) along with her husband. She presented with main complain of giddiness. Otherwise, she denied any abdominal pain, vomiting and diarrhoea. She had history of ingestion of minimal amount (unable to quantify) of Datura fruits two hours to prior admission. The fruits were brought to the ED and was confirmed by the emergency physicians. She had history of consuming a similar fruit without any symptoms post-ingestion. There were no mood disorders, suicidal or homicidal ideation and no history of drug abuse. On examination, she was mildly restless but not agitated and was able to obey command. Her skin was flushed and pupils were dilated (5mm/5mm). Her blood pressure was 129/76 mmHg, pulse rate 104 beats/min, respiratory rate 22/min, temperature 37.5°C. Laboratory tests including full blood count, renal profile, capillary blood sugar and urine FEME were normal. Electrocardiogram (ECG) revealed sinus tachycardia. Activated charcoal 30g was given. Her symptoms improved and was discharged the following day.

Case 2

A 47-year-old healthy Burmese man, with no known comorbidities, who is the husband of the above mentioned patient, was brought to the ED by his wife for restlessness and abnormal behaviour. She claimed her husband was unable to visualize her and communicate with her. He ingested five to six well-cooked Datura fruits hours prior to admission. There were no mood disorders, suicidal or homicidal ideation and no history of drug abuse. His blood pressure on arrival was 145/73 mmHg, pulse rate 126 beats/min, respiratory rate 25/min and temperature 37.7°C. He appeared restless, delirious and agitated with a Glasgow Coma Scale (GCS) of 14/15. He appeared flushed and pupils were dilated (5mm/5mm). He was moving all four limbs and reflexes were normal. No computed tomography scan of the brain was done. The electrocardiogram (ECG) revealed sinus tachycardia. Laboratory tests including full blood count, renal profile, capillary blood sugar and urine FEME was normal. Activated charcoal 30g was given. Total Intravenous midazolam 2.5mg was given to reduced his agitation. He was admitted for observation for 24 hours. He remains symptom free for 24 hours and was subsequently discharged without any medication.

Figure 1 showed the Datura fruit which was ingested by patients in Case 1 and 2. It was brought to the Emergency department for identification.

DISCUSSION

Datura is one of the most dangerous fruit in the world. It is a genus of nine species of vespertine flowering plants belonging to the family Solanaceae.¹ Owing to its extensive cultivation and naturalisation throughout the temperate, and tropical regions, including Malaysia. It is not uncommon to get poisoning by ingesting Datura fruit as it is not generally well known to be toxic by the public.¹ There are several tragic incidents reports in the medical literature of deaths from Datura intoxication.

The active constituents in the Datura plant include scopolamine, atropine, hyoscyamine and other tropanes which are classified as anticholinergic. It binds to muscarinic acetylcholine receptors, thus interrupting parasympathetic innervations.² It also blocks the few sympathetic cholinergic neurons, such as those innervating sweat glands. The combination of hyoscyamine, atropine and scopolamine produces effect similar to that of an anticholinergic delirium: a complete inability to differentiate reality from fantasy; mydriasis, hyperthermia, tachycardia, bizarre and possibly

This article was accepted: 23 October 2018

Corresponding Author: Wai Mun Chung

Email: chungwaimun@yahoo.com



Fig. 1: Datura Fruit

violent behaviour which is showed in the Case 2. Usually symptoms developed rapidly as early as 5-10 minutes after ingestion.²

Physostigmine is used as a reversal in Datura poisoning. It functions as a reversible cholinesterase inhibitor which results in cholinergic activity throughout the body. It is given in doses of 0.5-2mg at a rate no faster than 1mg/minute.³ It easily cross the blood-brain-barrier and has a peak effect time of five minutes when given intravenously.³ However, its usage remains controversial as it makes the patient vulnerable to hypotension, bradycardia, convulsion and asystole. A study had showed that administration of physostigmine did not reduce admissions to the ICU or reduce length of stay in the hospital.⁴ In the second case, patient was planned to be treated with physostigmine in view of toxic symptoms: hallucination, agitation, tachycardia, however, was aborted as physostigmine was not available from the hospital pharmacy.

Patient suffering from Datura poisoning generally require hospitalisation due to their agitated behaviour and confused mental status. Benzodiazepines are often given to curb the patient's agitation. Gastric lavage by administration of activated charcoal is indicated if the patient reaches the hospital within 1-2 hours to reduce the stomach's absorption of the indigested poisons.³ Supportive care with oxygen,

hydration and symptomatic treatment are administered as needed. Observation of the patient is continuous until the symptoms resolve, usually within 24-36 hours of the ingestion.

CONCLUSION

Datura plants contain anticholinergic properties. Consumers may present with a spectrum of anticholinergic symptoms, including hallucination, agitation, tachycardia, delirium, hyperthermia, and dilated pupils. Prompt identification of the symptoms with appropriate treatment can be life-saving. Some patients might not be able to provide history and therefore recognition of toxidromes is imperative. Awareness should be built among the public who may be exposed to such fruits or plants.

REFERENCES

1. Lester RN, Nee M, Estrada N. Solanaceae III – Taxonomy, Chemistry, Evolution. In: Hawkes JG, Ed. Proceedings of Third International Conference on Solanaceae. Kew: Royal Botanic Gardens 1991; 197-210.
2. Greene GS, Patterson SG, Warner E: Ingestion of angel's trumpet: an increasingly common source of toxicity. *South Med J* 1996; 89(4): 365-9.
3. Bliss M. Datura plant poisoning. *Clin Toxicol Rev* 2001; 23(6): 1-2.
4. Salen P, Shih R, Sierzenski P, Reed J. Effect of physostigmine and gastric lavage in a Datura stramonium-induced anticholinergic poisoning epidemic. *Am J Emerg Med* 2003; 21: 316-7.