

Mad Honey Intoxication: A Rare Case Report

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ABSTRACT

Honey containing grayanotoxin is called mad honey which is found in Turkey, Japan, Brazil, Europe, North America and Nepal. Patients present with clinical manifestations like bradycardia, hypotension and syncope. In this case report we present a 27 years male who presented with bradycardia and first-degree heart block after consumption of only 10 grams of mad honey.

Keywords: Bradycardia; grayanotoxin; mad honey.

INTRODUCTION

Mad honey is a term given to honey that contains grayanotoxin.¹ It is primarily found in Turkey, Nepal, Japan, Europe, Brazil and North America.² Grayanotoxin is found in nectar and pollen of plants of the Ericaceae family like Rhododendron L.³ Analogues of grayanotoxin have been isolated from local honey sample from eastern Nepal.⁴ In Nepal alone 47 cases of mad honey intoxication have been reported since 2010 to 2018.⁵

Here we report a case of a 27 years male from Chitwan, Nepal who revealed bradycardia with first degree heart block after consumption of mad honey.

CASE REPORT

A 27-year-old male from Chitwan presented to the emergency department of Chitwan Medical College with chief complaints of dizziness, nausea, and syncopal attack. The symptoms started after around

20 minutes of consuming approximately 10 grams of locally produced honey from Laprak, Gorkha. He also reported auditory hallucination and blurring of vision. There was no history of fever, cough, chest pain, abdominal pain, vomiting, loose stool or loss of consciousness.

He does not have any history of past medical illness or surgeries. He does not consume any long-term medications. Besides honey he had not consumed any medication, supplements, alcohol, new food or drink in the past month. He does not consume alcohol and does not smoke. No other family members reported similar complaints.

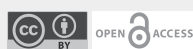
On physical examination the patient was ill looking and was not oriented to time, place and person. The auscultatory blood pressure measured by an aneroid sphygmomanometer was 80/50 mm of Hg, heart rate was 45 beats per minute, respiratory rate was 24 breaths per minute, saturation in room air was 82 % and temperature was 98°F.

The neurological evaluation revealed a confused verbal response with a Glasgow Coma Scale was 14/15. The extremities were cold but were not associated with edema or paresthesia. The pupils were bilaterally equal and reactive to light. No other abnormalities were detected during the physical examination.

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The blood urea was 12.50 mg/dl but other baseline investigations which included random blood sugar, renal function test, complete blood count and urine routine examination were under normal limits. A 12-lead electrocardiogram revealed sinus bradycardia with heart rate 55 beats per minute and first-degree heart block with a prolonged PR interval of 0.24 seconds.

Two pints of normal saline of 0.9% was given intravenously over 30 minutes. He was supplemented with oxygen therapy via nasal prongs at 4 l/min and a stat dose of 0.6 mg intravenous atropine was given. The symptoms of the patient recovered within a couple of hours.

DISCUSSION

Honey has possible benefits against hypertension, diabetes, infection, inflammation and tumor. It may also have cardioprotective and hepatoprotective benefits but when it contains grayanotoxin which causes poisoning.⁶ Mad honey is a term given to honey that contains grayanotoxin.¹ Grayanotoxin interacts with voltage gated sodium channels when they are in an open state which maintains the open state not allowing inactivation of the channels. This leads to hyperpolarization of the cells. Involvement of muscarinic receptors have shown to cause cardiotoxicity.³ Some of the clinical manifestations observed in mad honey intoxication are bradycardia, hypotension, brady-arrhythmias, syncope, nausea, vomiting and dizziness. The symptoms have been reported to appear after 30 minutes to 4 hours of mad honey consumption. The amount of mad honey consumption leading to symptoms is around 15 to

30 grams.⁵ Mostly male patients have been reported presenting with mad honey intoxication.^{2,7}

The majority of the patients, 99.59% had a diastolic blood pressure ranging from 20 mmhg to 80 mmhg and 62.54% had a systolic blood pressure ranging from 80 mmhg to 120 mmhg which is similar to this patient who had a diastolic blood pressure of 50 mmhg and systolic blood pressure of 80 mmhg.² Bradycardia and heart block have been reported previously in studies from Turkey and Nepal.⁷⁻⁹ Gunduz A et al. also reported 66 patients (100%) presenting with hypotension, 95% with bradycardia, 91% with nausea or vomiting, 74% with sweating, 74% with dizziness, 67% with impaired consciousness, 30% with syncope and 20% with blurry vision.³

Okuyan et al. reported the symptoms of mad honey intoxication appeared after consumption 20-200 grams of mad honey.⁷ Yilmaz O et al. reported the average amount of mad honey consumed to cause clinical manifestation among 66 patients was 13.45±5.39 (5-30) grams which was similar to our case.¹⁰

Honey may have potential health benefits but in the presence of grayanotoxin can be poisonous.⁶ The doses causing mad honey intoxication are reported to be varying.^{7,10} A proper screening for grayanotoxin and other possible substances is recommended for locally produced honey. Further analysis is recommended to evaluate the dose dependent response of grayanotoxin.

Conflict of Interest: None.

NJHS

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